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There are many other valuable articles upon kindred subjects of vital interest to the agriculturist, copiously illustrated.

The folded maps and charts show the production of wheat, corn and cotton for 10 years, and the results of artesian irrigation. The best idea of the scope of this magnificent work may be gathered from the following list of the illustrations:

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THE AMERICAN FARMER.

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A ROYAL FARMER.

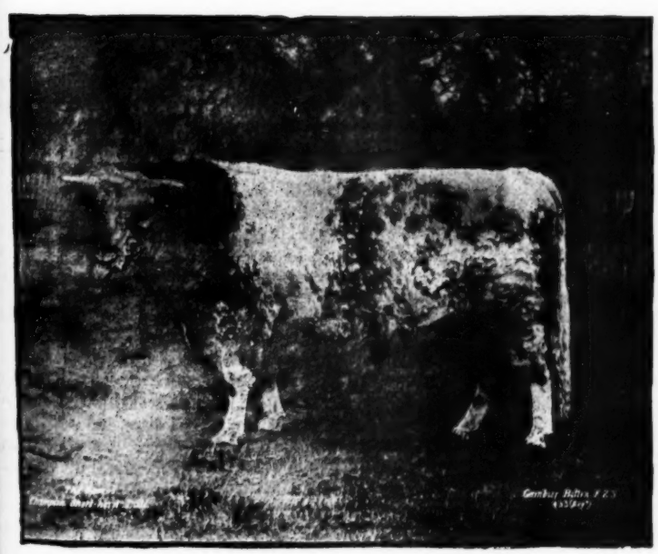
The Queen of England Interested in Agriculture and Stock Raising.

BY FRANK G. CARPENTER.

Special correspondence THE AMERICAN FARMER.

LONDON, August, 1892.

IT WILL be a surprise to many to know that the Queen of England is one of the best farmers of Europe. She has vast estates in England and Scotland, and she raises all sorts of crops and makes a specialty of the best kinds of stock. She has near Windsor Castle two large farms, and her breeding establishments there are among the finest in the world. On the Shaw farm, which is a part of the Windsor estate, she has more than 200 head of fine stock, and you will find here some of the best short-horn cattle in the world. The Queen's champion short-horned bull, the engraving of which accompanies this article, is one of the most famous bulls of England, and its beauty cannot be surpassed. This engraving was made from a photograph taken a few weeks ago by Gambier Bolton for the Queen, and it is perhaps the finest photograph of its kind ever made. No farmer need be told that an animal which looks like this is anything else but of the purest blood. The Queen has a number of Herefords and Devons on this farm, and she breeds her stock after the most



THE QUEEN'S CHAMPION SHORT-HORN BULL.

practical methods. She has won some of the best prizes at the cattle shows of England, and her stock is eagerly sought after and brings high prices. Perhaps no dairy in the country is managed on better business basis than hers. Her dairy is a big one-story yellow brick, trimmed with sandstone. Its interior is lined with tiles, and the butter is worked on a marble table. The milk is kept in white crocks of China, and the butter is made twice a day. The cows are milked twice a day, and the Queen skims her crocks two times daily. The milk is kept in cold water. A register is preserved of each cow, and you can have the history of its feeding, its milking, and all its progeny from its birth until it is killed for beef or sold to improve the stock of the rest of the Kingdom.

The Queen is especially fond of this dairy, and there is a sort of a sentiment connected with it which appeals very strongly to her. It was built by her husband, Prince Albert, shortly after his marriage to the Queen, and this Shaw farm was the one upon which he tried his experiments as a royal farmer. I am told that he laid out the farm, and that he inaugurated the system of drainage which has made it one of the best farms of the country. Prince Albert personally watched the construction of these drains. His greatest delight was in his stock, and shortly after he had put the farm in working order he began to exhibit his cattle at the various agricultural fairs. This was 50 years ago, and from that time to this the Queen's stock has been one of the leading features of the agricultural exhibitions of England. This stock farm is now managed by a Mr. Tait, whose father managed it before him; but he advises the Queen as to many of his operations, and there is a suite of apartments connected with the buildings of the farm which is devoted to the use of Her Majesty, and from which she can go through the various buildings in strict privacy. It is from this farm that the supply of eggs and poultry for Windsor Castle come, and in connection with the dairy there is a range of poultry houses where, when Queen Victoria's children were young and Prince Albert was still alive, the Royal family used to walk in the morning and partake of fresh-laid eggs cooked in one of the rooms almost as they dropped from the hens. There are a number of laborers connected with the estate, and the Queen has very comfortable dwellings for these. There is a night school for the working people, and the laborers receive good wages. The men in charge of the stock have had long experience in stock raising, and most of them have been on the farm for a generation. They know just how the cattle should be cared for, and everything is done by rule. There is a fixed time for turning the cattle out to pasture, and in the early Spring they are allowed to graze in the fields only for a limited time during the day. Later on they remain in the fields all the time, and it is about the 1st of October that they are taken in from the pasture, and along late in November they are kept in the stable and not allowed to roam in the fields at all. The Queen feeds her stock three times a day in the Winter, and the milking cows are given a change of diet now and then. The hay is always chopped up for them, and they have wheat bran and mashed oats. Their food is graduated according to their milk, and when they are fresh they have more and different feed than they do when nearing their drying-up time. The greatest care is taken as to the temperature and ventilation of the stable, and these cows are as carefully treated and their health is as much studied as if they were human beings. The food eaten by them is raised on the farm, and the probability is that they yield a fair profit to Her Majesty every year.

The Queen's sheep are worthy of notice, and her mutton is the finest in England. She has another farm in connection with the Shaw farm, which is known as the Flemish farm, and her farming lands about Windsor include more than 1,000 acres of land. Among her horses she has a number of fine Clydesdales, and her pigs are famous. Her best hogs are Berkshires, though she has some Tamworth pigs, and also some Yorkshire and Windsor Whites. Through his training, the Prince of Wales acquired quite a love for farming, and he manages his estate almost as well as his mother does hers.

Interesting Census Returns.

The census returns furnish some very interesting reading. For instance, there were 334,194 families in the State of Tennessee with an average of 5.29 persons to a family. There were 323,136 dwellings in the State with an average of 5.47 persons to a dwelling. Of course there was no decimal fraction of a person in any dwelling, but the figures make the averages stated. The total number of dwellings in the United States in 1890 was 11,483,318, and the average number of persons to a dwelling was 5.45. The total number of families in this country was 12,690,152, and the average number to a family 4.93.

It may not be generally known that two men in every three use tobacco, yet a medical man in Vienna asserts that diphtheria is thrice as prevalent among smokers as among those who deny themselves the luxury of the weed.

SUGAR-BEET CULTURE.

The Ripening of the Root and the Manner in Which it is Harvested.

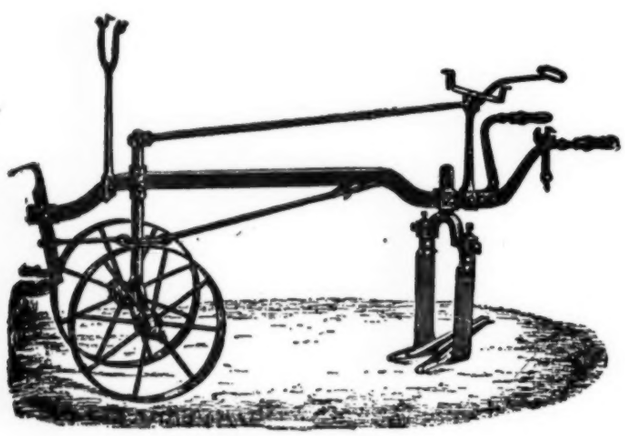
BY WALTER MAXWELL, U. S. DEPARTMENT OF AGRICULTURE.

IN THE course of four previous special contributions upon the culture of the sugar-beet we treated of the preparation and fertilization of the soil, the planting of the seed, and all the acts and operations which make up the light cultivation, extending up to about the middle of July, when the crop is left to the care of nature until the harvest.

The season is rapidly drawing on when the final operations belonging to the crop must be entered upon, and the beets gotten up, prepared for, and shipped to the factory. Already in California the manufacturing season is in process, and a considerable weight of beets has been delivered to the factories.

The approach of the beet crop toward maturity and fitness for the factory is denoted by the appearance of the foliage. Just as in general the farmer knows when Winter wheat, oats, barley, or other crops are ready for cutting, the beet grower follows the changes of appearance in the beet leaves and determines thus approximately when they are ready to "lift." As the crop draws toward maturity, most of the under leaves drop off and decay, and the remaining foliage, which comprises the latest leaves which the root has put forth, goes gradually over from the deep green color characteristic of the period of growth into a light green, which is everywhere tinged with a soft yellow. When the beet grower rests his judgment solely upon the color appearance of the crop, in respect of its state of maturity, he waits for the beets to take on the aspect we have denoted in order to be assured that the sugar value of the crop is about at its best.

When the crop has put on the golden-green appearance of which we have spoken, all leaf growth has usually ceased. Any further activity of the organism is engaged within the root itself in the manipulation of the crudely-organized substances contained in the cells, and in the ultimate conversion of those substances into crystallizable bodies, such as sugar. It is well known that after the beet has ceased growing and adding to its weight the formation of sugar still continues. And again, after the beet has ceased adding to its weight and content of sugar, further processes go on within its organism, whereby much of the refuse matter produced by the complicated process of sugar-formation in the plant cells becomes removed from suspension in the fluids of the beet, and the so-called "purity of the juice" is increased.

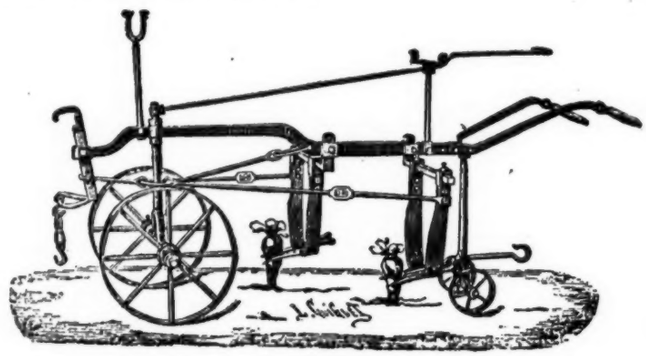


BEET LIFTER FOR ONE ROW.

The final operation of the beet organism, as likewise of all similar organisms, consists in a more perfect ordering of its ultimate constituents, and as far as that operation embraces the presence of sugar, it comprises a mode of "refining" whereby that body is left in a state in the highest possible degree free from other non-crystallizable matters. The polariscope, by which instrument we can more accurately determine the condition of maturity of the beet, enables us to furnish an example of what has been stated. A sample of beets is taken, the weight of which is constant, or which have ceased growing. On Sept. 20, it may be stated, the polariscope indicates that the content of sugar in the beets is 15 per cent. On Oct. 1 the sugar content has risen to 17 per cent., and by the aid of another process it is found that the so-called purity of the juice, which means the proportion of sugar to other solid matters present in the juice, is only 75 per cent. On Oct. 12 it is found that the sugar content has remained constant at 17 per cent., but the purity of the juice has gone up to 90 per cent.; or, in other words, the beet organism has so far purified its juices that it may now be called a sugar-solution, containing only 10 per cent. of non-sugars. That may be taken as the period of highest maturity and maximum value of the beet.

If the beet crop is not harvested at the period of its maximum value it is found to "go back." If it stands too late into the Fall, or unseasonable weather, or other adverse conditions, the polariscope reveals a falling off in value. In the first place, it is seen that the juice goes back, the per cent. of purity falling possibly three to five per cent. Secondly, the sugar content will run down and the impurity of the juice increases, and that "going back" process may go on until the beets are of no value to the factory. The sugar content has been lowered, and the normal per cent. which can be recovered by the factory has become lessened on account of the lowered purity of the juices.

The factories do not, as a rule, wait until the crop has reached its highest state of maturity. Were they to do so the opening of the season of manufacture would not merely be very late, the actual season would be necessarily shortened in many districts, and before it could be brought to a close the crop would suffer more by deterioration than would be realized by commencing before the beets were fully ripe. Moreover, in some districts, where there is a liability to early and severe frosts, all operations might be stopped by a freeze out, such as occurred, in some measure, in Nebraska last year, and which is very liable to occur in north Germany and in the northern parts of Russia.



BEET LIFTER FOR TWO ROWS.

The getting up of the beets in the European countries commences with September. In the Fall of 1890 we visited the factories of Saxony, Sept. 4, and found certain factories in the neighborhood of Magdeburg in full work. The beets were not at their best, either in respect of the content of sugar or the purity of the juices, but they were in a workable condition. In France and Belgium the season opens one or two weeks later, and likewise in the other beet-growing countries. In this country there is a wide variation. In California the factories this year have opened up in the middle of July, while in Nebraska it is estimated that the beets will be ready for handling by Sept. 15, or thereabouts.

The specific time when a given variety is ripe depends upon the soil and climate in which it is grown, and likewise the time when beets grown in a given soil reach maturity is also regulated by the variety. Usually, in any kind of a good beet soil, several varieties are planted, and being respectively early or late varieties they mature in convenient order for the supply of the factory.

The work of "lifting" or getting up the beets is accomplished by several methods, and the adoption of each is determined by the scope of the area planted, the nature of the soil, and the conditions of labor. Those methods include the lifting by hand, with the use of a fork; plowing out with a common plow; and actual "lifting" by means of implements specially constructed for that purpose.

Lifting beets with the fork is confined to small patches which are grown by peasant farmers, and where the horse implements could not be used. Beets of a pedigree character, which are being grown for the special propagation of seed, are likewise always gotten up by hand with the use of the fork. A strong, steel-headed fork is used, with four times of a considerable length and stoutness. In raising the beet the fork is put down vertically or straight into the ground at a distance of four inches from the beet. By keeping that distance from the root, and letting the fork go down in a straight line, there is a minimum of danger that any of the beets will be touched by the implement and damaged. If care, however, is not observed by the men, and the fork is dug down in any way about the beets, the probability is that some of the roots will be punctured and some small damage will be done, particularly to such beets as are intended for seed production. In raising the beet with the fork the latter is put down into the ground as we have described; the man then takes hold of the foliage of the beet with the left hand, presses back the fork with the right, and the root is thus easily and perfectly drawn from the ground.

The application of the common plow to the work of lifting beets is seldom done, excepting in the case of such as are intended for feed purposes. The plow is drawn at a depth of eight or nine inches along the side of each row at a distance from the beets of about one to two inches. After the plow, laborers go along and pull out the beets and throw them back on the ground already plowed.

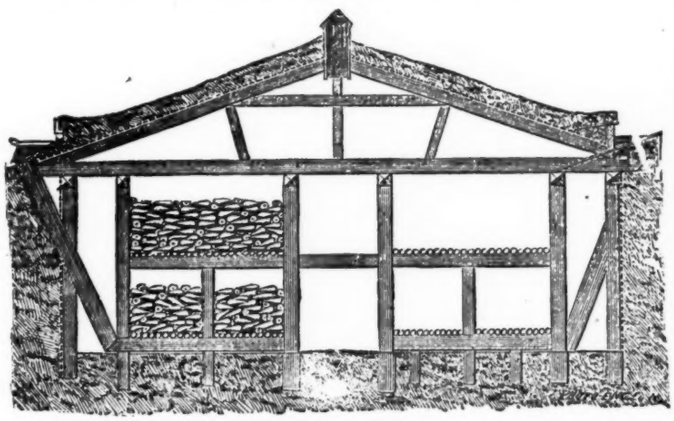
In order that the use of the plow may be practicable it is necessary that the beets stand very regularly and straight in the row, and likewise that the plow be drawn extremely straight; otherwise great damage is done by the plow

striking the beets, and in some cases, as we have seen, cutting them in two. Lifting with the common plow is bad practice, and deserves no further consideration.

The implements which are used upon the great scale for getting up beets are the so-called "beet-lifters." Those implements are constructed to take one or two rows, and are drawn by two and three horses, respectively. In strong ground four horses are required to draw the two and three-rowed lifters. In the north of France, upon the beet farm of Mr. Dufay, we observed that oxen were exclusively used for the purpose. Mr. Dufay said that oxen not only draw more steadily, but that they do no damage to the roots by treading upon them, as heavy horses, which are not well trained to keeping the row, often do.

The mode of action of the lifter will be easily understood by observing the diagrams. The implement does not lift the root completely out of the ground; it is "set" at a depth which is regulated by the nature of the soil and the length of the beet, so that the vertical arms to which the actual lifters or fingers are attached enter the ground just so deep as to enable the fingers to grasp the beet about four inches below its neck, or so low that the beet cannot slip through. As the implement moves the beet is gradually drawn up by the fingers of the lifter until the lower and thinner part of the beet root is reached, when it slips through between the fingers, which, as it is observed in the diagrams, are l ft sufficiently extended for that purpose. After the implement has passed and the fingers have lifted the beets in the mode we have described, the roots settle again into their place, and remain with the lower half quite hidden in the earth.

The "lifter" taking two rows will raise between three and five acres per day, which is regulated by the physical condition of the soil; and the work done is satisfactory in every respect. The beets are not bruised or otherwise damaged, and they are not lifted completely out of the soil, and are thus less exposed to atmospheric influence. Further, the land is left moderately firm after the passage of the lifter, which is advantageous in hauling the crop off the ground.



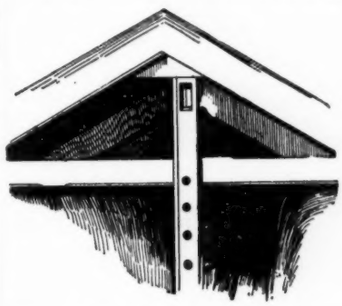
RUSSIAN BEET CELLAR.

After the lifting is done, the next process is the preparing of the beets for hauling to the factory. Men, women, or children follow the lifter and take up the loose beets and clean off the thickest of the soil attaching to them (this is more generally not done), cut off the tops, including the coarse necks, and throw the roots into rows wide enough apart to allow of a wagon passing up between them for loading; or the beets are thrown into small heaps, when they are hauled off immediately, or they are covered with soil and hauled later, as they may be required by the factory. The work of topping or cutting off the necks and leaves from the roots is very simple; and, as we have said, it may be done even by children. Efforts have been made to do the topping by a machine invented for that purpose, but so far without success.

In connection with the work of getting up the beets is the plan of selection of the so-called "mother beets," or such as are chosen for the purposes of seed propagation; and likewise the storing of the mother beets, according to methods obtaining for their protection during the Winter. At the time of taking up each variety, and before the beets have been topped, an expert person goes over the whole plat and selects those which are approved for seed growing. The expert is guided in his selection by the physical properties of the root. The beet must not weigh less than one pound nor more than 10 pounds. It must have one long, tapering tap-root, and be generally free from side roots. The foliage system must not be coarse, and it should rest closely upon the head of the beet, with a very short "neck" intervening. Such are the points which direct the selection of the seed-producing beets. Pedigree beets, or those of the most select quality, are usually planted in small patches—such as we observed upon the seed farm of Mr. H. Vilmorin, in France—and those beets are exclusively handled with the fork, and everything else is sacrificed to the most careful selection of such as are (even to those fitted in a moderate degree) suitable for seed bearing.

In very temperate climates, such as the Pacific States, no particular mode of Winter storage of the mother beets is necessary. There is no danger of a temperature so low as to injure the vitality of the roots. In the neighborhood of Paris, France, and in the middle and south of England, extreme precautions against frost are not taken. Mr. Henry Vilmorin packs the mother beets in pure sand, and they are left on the ground surface without being "soiled up." In other regions, however, such as north Germany, Russia, and the central Northwestern States of this country, the climatic condition are extremely different. The beets have to be stored deep in the dry ground and covered up with soil to a depth of several feet in order to secure them against periods of weather when the temperature may continue for days together 30° below zero.

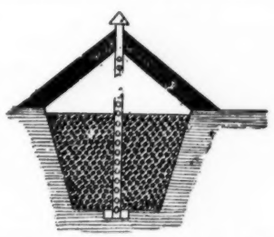
The pits or holes made for storing the beets deeply are called silos. In preparing these silos certain other circumstances have to be kept in view, as well as protection from frost. It is necessary to select ground for locating the silo which is free from stagnant water to the depth of the floor of the silo; and whilst it is essential to construct the silo of a given depth in order to be secured against frost, it is equally important that the depth be not so great as to prevent the possibility of a proper circulation of fresh air at given times.



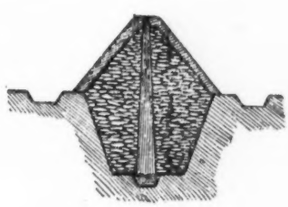
INTERIOR OF U. S. EXPERIMENT STATION SILOS.

EXTERIOR OF U. S. EXPERIMENT STATION SILOS.

There are various types of silos in use. One method is to dig a pit two and a half to three feet deep by four or five feet wide, the width gradually lessening toward the floor of the pit. In such a silo the beets are laid carefully, and at spaces of two or three feet apart ventilating shafts are placed which reach from the floor of the pit up through the beets and the soil covering them, and connect with the air. In comparatively small silos such a mode of ventilation is usually sufficient. Another type of silo, such as the silos in use at the United States Sugar-Beet Station in Nebraska, is as follows: The depth is four and a half feet and the width six feet, the length being 18 feet. The walls of the silo are slanted in so that the width of the floor is only four feet. In order to secure a sufficient ventilation and replacement of the heated air given off by the stored beets by cool fresh air from outside an air canal underlies the floor of the silo, which is connected at each end with air shafts which at the bottom end are let into the canal, while the upper ends protrude through the soil covering the silo and connect with the air. The beets are carefully packed in very damp, pure sand, and up to within six inches of the level of the ground. Every three feet a perforated wooden shaft, let into the air canal with its bottom end, and connecting with the air with the upper end, is placed in the midst of the beets, so that in a silo of 18 feet in length there are six such shafts, and these abundantly suffice to equalize the temperature of the interior of the silo by carrying off the heated air and drawing in the fresh air from without. Over the packed beets, and resting upon the ground level, a frame roof is placed, which is covered with soil to the depth that is required. The space, however, between the top of the beets in the silo and the wooden roof is left vacant as an air space, and that not only assists the circulation of currents of air of different temperatures, but it also obstructs the passage of currents of extreme cold from without into the silo. In very cold spells the air shafts are stopped up, and reopened with the appearance of milder weather.



INTERIOR OF U. S. EXPERIMENT STATION SILO, CONTAINING BEETS.



A COMMON SILO.

In Russia beets are stored very much in cellars, as is represented by one of the diagrams. Beets, however, do not usually retain their normal condition when kept in cellars. They are protected from the frost, and in such respect are preserved. The main object, however, to be held in view in siloing is to preserve the beet until the Spring in the precise state in which it was taken out of the ground in the previous Fall, and that means chiefly that there shall be no loss of water by evaporation and no loss of sugar. Now, beets kept in cellars rapidly lose water by evaporation, and with that loss of water chemical changes take place in the organism of the beet which cause a falling off in the sugar. The loss of water by evaporation can, and does, go so far that the vitality of the beet is gone. They will not grow; that we have frequently seen. By a judicious packing of the beets in sand, with the addition of the exact amount of water, not only is a low

temperature secured; the beets are so enveloped by moisture that no evaporation from the beets themselves can take place. In such a case there is no loss of water, and if the beets are removed from the silo in the Spring, before the natural Spring growth begins, there is no loss of sugar. In such a way the beets are preserved in the silos until the middle of March, when they require to be taken out of the silos, where they are so densely packed, and placed in shallow pits in the cold earth, and covered with sufficient soil to protect them against Spring frosts until they are planted out.

We have treated in the above article only of the harvesting and modes of preservation of the beets. There is likewise the work and season of the harvesting of the beet seed. However, as the production of seed from the beet has not been pursued in this country in the past, the first systematic attempt at propagation being made this year by the United States Sugar-Beet Experiment Station, we shall very briefly refer to the work, and postpone a more special consideration of the subject until the data and report of the endeavors at the home-production of our beet seed are to hand.

The seed harvest commences in the first week of August and continues into September, the time of maturity being regulated, as in the examples of all other seeds, by the climate. In Europe, where large fields of seed are grown, the "beet stand," or the branches bearing the seed, are cut off the root and laid upon the ground exposed to the sun until the seed and the branches are dry enough to be moved into a barn. The seed is separated from the branches by thrashing with the flail. After the thrashing the seed is cleaned by winnowing machines particularly modified in their construction in order to suit th lightness and size of the beet seed. Small patches of beet seed, and all kinds having a pedigree or particular value, is gathered by hand. Often the seed ripens irregularly upon the branches, and the seed of one stem is ready to gather whilst the remainder is still green. In such cases the seed is stripped from the branches by hand as it comes to maturity. This method enables the whole of the seed to be gathered in a much more perfect state of ripeness than the more wholesale method of cutting the whole seed stand together, in which latter case much seed that is only half ripe is gathered with the best seed; or if the time of cutting is deferred until the later seed is also ripe, the best seed may be scattered by winds upon the ground. Great judgment and care is required in determining the time of cutting or gathering the seed and in cleaning it in order to procure a sound and salable sample.

Singing Mice.

A four-footed creature that sings is certainly curious enough to have its existence doubted, and many people do not believe that such a thing as a singing mouse has ever been seen or, more correctly speaking, heard. It has, though, and in a certain house, beloved of mice generally, what sounded like the voice of a very small bird was often heard in the wall. A trap was set for the uproarious ones that kept up a constant squaking and gnawing, besides nibbling every viand that they could possibly get at; and one night the dainty bits of cheese lured into captivity a mouse that looked like other mice and acted like a wren. Such a quivering, musical, little warble could scarcely come from any other throat than that of the tiny bird.

But it was soon proved beyond a doubt that mousie did it himself, and that he must be the very singer who gave the mysterious wall concerts, so the next thing was to make him a cage. It was quite an uncommon one, as uncommon as he was himself—a glass globe covered with netting. A warm nest was arranged in it, and the curious little performer took very kindly to his luxurious quarters. He had, of course, the best cheese to nibble at, and he evidently considered himself in clover. He put on airs, too, and seemed to know when he was being watched. At such times he would raise himself up, and try with all his small might and main to act like a canary. Sometimes he would hold up one paw, and then he was a full-fledged prima donna, sending forth such loud notes that it was almost startling to hear him.

But an easy life did not seem to agree with the amusing little rodent, and possibly he pined for the home in the wall, with its boundless freedom, where he may have left "his young barbarians at play." In a few days he died without any apparent cause, and the experiment of caging a singing mouse was altogether unsuccessful.

Other four-footed warblers have been kept in good condition for a much longer time, giving abundant opportunity to make some very interesting discoveries in regard to their musical organs. They do not, it appears, sing with their throats, like other songsters, but with their noses. Their vocal chords are vibrating folds of the skin at the outlet of each nostril, and the performer can vary the tone from high to low by using more or less force in expelling the air. When quite by himself, the sound produced by the singer resembles that of an Æolian harp; but in a cage, when the small prisoner is often singing for effect, the notes are much bolder.

A cat purrs very much in the same way as a mouse sings, and both are signs of comfort and satisfaction. But the mouse's song, unlike that of the cat, has given rise to many absurd superstitions, and houses have acquired the bad reputation of being hanted because of singing mice in the walls. The soft wailing sound which the song then assumes is said to come from the uneasy spirits of those who have been murdered; and the servants who are frightened by the singing mouse could never be made to believe that the continual picking and stealing from the pantry are done by the singer himself and his near relatives. For although it seems as if so gifted a creature should be above such night marauding, he is really no better than his commonplace companions.—*Harper's Young People.*

Our Wheat in Peru.

It is an excellent opportunity now offered for the sale of our wheat in the countries of South America. The recent Pan-American Conference helps the prospects greatly. William P. Tisdel, Commissioner for the World's Columbian Exposition, writing from Peru, says: "I am surprised to find that only Americans stand in the way of large and constant sales of wheat in this market. I have visited the Santa Rosa mills, where every month in the year more than 1,000 tons of wheat is reduced to flour, wholly for consumption at home, and this is only one of many mills which grind wheat from nearly every country other than the United States. The proprietor of the Santa Rosa, Mr. Milne, assured me that he had tried to get rates from the steamship companies which would enable him to buy wheat in the United States, but it was impossible. The lowest rate he was able to get from San Francisco was $17.50 per ton, while from Australia he gets a rate by steam (tramp steamers) of $9 per ton. From Chile the rate is 4 sols per ton, and from the Argentine Republic 11 sols per ton. Mr. Milne assures me that he prefers the California wheat, and, too, that he is willing to pay a higher rate than from any other country, but that the lowest rate he can get from California is so arbitrarily high he cannot buy in that market. Mr. Milne has tried to freight wheat from California by sail, and has been somewhat successful, though he has been compelled to abandon this method because of the long time required by the vessels in making the voyage, often occupying 80 to 100 days. This is explained by the ships being compelled to make a west by southwest course until passing to the south of 34 degrees of south latitude, and then coming under the influence of the trade wind.

"The quantity of wheat entering the port of Callao is estimated at 60,000 tons per year, while to other ports, including Mollendo (for Arequipa), there may be added another 25,000 tons. The greater part of this wheat might come from California if the steamship companies would make it possible to transport by steam.

"This is a matter well worth the attention of those interested in growing, selling, and shipping wheat; and there is no telling what the trade might not be brought to if the Pacific Mail Steampship Company can be induced to make favorable rates, in connection with the West Coast steamers, for transportation to this country.

"What we need is an American line of steamers taking in the entire west coast of both North and South America. I am sure it would be a paying enterprise to whomsoever will inaugurate it."

The Old Dutch Farmhouse.

The old farmhouse usually consists of a kitchen, a large living-room, a cheese-room, a dairy, two small bedrooms in the garret and at the back (forming part of the main building), the big cow stable with its huge loft, and a wide space in the middle, where thrashing and winnowing are still done in primitive fashion. Hay ricks with movable roofs on four poles, various barns or sheds, and an outside kitchen called the "baking-house," where the rough work is done (food cooked for the cattle, etc.,), surround the main building.

The "baking-house" is often used as living-room in Summer, and is more cheerful than the solemn apartment into which the visitor is invariably ushered. A wide chimney lined with tiles stretches nearly across one side of this room; but the open fire on the hearth has long ago disappeared and given place to an ugly stove. Quaint brass fire irons hang behind it, and on either side is an armchair, differing from its humbler brethren only in the possession of wooden arms. If there is a baby in the family it is likely to be reposing in a cradle with green baize curtains as near as possible to the fireplace, in defiance of all laws of health. Two or three large cupboards, sometimes handsomely carved, always kept well polished, stand against the whitewashed walls. One of them generally has glass doors in the upper part, and on its shelves the family china—often of great value—is exposed to view. Unfortunately, these heirlooms in old families have been largely bought up by enterprising Jews.

Sometimes, however, sentiment has proved stronger than the love of money, and the farmer has not parted with his family possessions. In a corner of the room a chintz curtain, or sometimes a double door, shows where the big press bed is—an institution of pre-hygienic times—which, to the peasant mind, has no inconveniences whatever. In the middle of the room a table stands on a carpet, and, as people take off their shoes at the door and go about in their thick woolen stockings, neither it nor the painted floor ever shows signs of mud. Another table stands near one of the windows, of which there are two or three. The linen blinds so closely meet the spotless muslin curtains, which are drawn stiffly across the lower panes on two horizontal sticks, that a stray sunbeam can hardly make its way into the room, even if it has been able to struggle through the thick branches of the clipt lime trees that adorn the front of the house. On one of the tables a tray stands, with a hospitable array of cups and saucers, teapot, etc., and is protected from the dust by a crochet or muslin cover. The huge family Bible, with its big brass clasps, has an honorable place, often on a stand by itself. Rough wood-cuts or cheap prints, and a group of family photographs, which do not flatter the originals, are hung on the walls.—*The National Review.*

It is stated on good authority that seven-eights of the bread used in London is made from American wheat.

Palatable and nutritious bread is made from flour which is obtained from dried bananas.

PROGRESSIVE AGRICULTURE.

The Most Recent Discoveries, Developments, and Ideas in the Science of Farming.

The Composition of Milk.

PERHAPS THERE is no agricultural product, sugar alone excepted, which has been subjected to so many analyses as milk. The cause of this distinction is not difficult to detect. Milk is a universal food. The natural nourishment of the young of all mammals, it continues to be one of the chief nutrients of man in the adult period of life. Furnished to millions of consumers in cities, it has been obnoxious to extensive adulterations, and to prevent these adulterations careful chemical control has been instituted and maintained. The milk supply of nearly all large cities is sampled every day, and these samples submitted to analyses, more or less complete. The ease with which milk can be adulterated has proved a powerful stimulus to the practice of adulteration. The most common form of adulteration consists in selling the first of the milking as whole milk, the latter part, the strippings, being much richer in fat. Next in frequency after this is the practice of removing a part of the cream and selling the residue as milk, or of adding water to the milk before exposing it for sale.

The mean composition of milk cannot be determined by a study of the yield from one cow. The milk of individual cows varies from many causes. Among the most prominent of these may be mentioned race or breed, period of lactation, character of food, and individual peculiarities. In the milk of some cows—notably of the Jersey breed—the normal per cent. of fat may rise as high as five or six, while in other cases it may fall as low as two. The milk, however, which is brought to cities for sale is the joint product of many animals, and such milk is found to have a remarkable similarity of composition the world over. In general, it may be said that milk has 87 per cent. of water and 13 per cent. of solid dry matter. The solid matter in milk is composed of the following substances, basing the percentages on the whole milk: Water, 87 per cent.; solids, 13 per cent. Of which there are of fat, 3.6 per cent.; nitrogenous bodies, 4 per cent.; sugar, 4.7 per cent.; mineral matters, etc., .7 per cent. Total, 13.0 per cent.

The solid bodies in fresh milk are either in solution (sugar, casein) or in suspension (fat). The white-yellow color of milk is chiefly due to the presence of the fat in small particles in suspension. The specific gravity of fat is less than that of the serum of the milk, and as a consequence the fat tends to come to the top. This separation begins to take place in the udder of the cow, and for this reason the strippings are richer in fat than the first of the milking. For a similar reason the greater part of the fat is separated as cream when milk is set or when it is passed through a separator. While the yellowish color of rich, fresh milk is undoubtedly due to the fat globules, the white color is not wholly caused by them. When the fat has all been separated, excepting a very small portion, the milk has still a blue-white color. It is probable that insoluble salts of lime—notably lime phosphate—have something to do with causing the white color. That portion of the nitrogenous bodies in milk known as casein is also concerned somewhat in giving milk its color. The casein appears to be in a state of semi-solution. When milk is passed through an ordinary filtering paper the casein passes through without difficulty. When, however, milk is forced through fine, unglazed porcelain, the casein does not pass through. It is thus seen that the casein particles are larger than the pores of the porcelain and smaller than the pores of the paper. The fat particles are also taken out by filtering through porcelain, and the serum which forms the filtrate is entirely free from whiteness.

By agitation, as in churning, the fat particles can be made to agglutinate, forming butter. It was formerly supposed that each particle of fat was inclosed in a thin membrane, and that this membrane had to be destroyed before the particles would gather. Later investigations have failed to identify any such covering for the fat particles. The presence of a small quantity of fibrin in milk helps undoubtedly to prevent the fusion of the fat globules, but the chief cause of their seggregation is the difference of surface tension between the fat globules and the albuminous liquid in which they float. The fat of milk consists of a mixture of glycerides; that is, of fatty acids combined with the base glycerin. The principal glycerides present in milk fat are olein, stearin, palmitin, and butyrin. It is the latter glyceride which gives to butter its peculiar flavor, together with small quantities of similar bodies known as caproin and caprylin. The two latter are present in large quantities in the milk fat of the goat. The rancidity of butter is due chiefly to the decomposition of butyrin and its congenors. The glycerin is separated and the acids become free. Olein, stearin, and palmitin are decomposed with greater difficulty, and for that reason oleomargarine, which contains no butyrin, keeps better than butter.

The nitrogenous principles of milk consist of casein, albumin, and fibrin. Of these, the casein forms the chief part, and the fibrin is found only in minute quantities. As has already been intimated, the casein of the milk is not in complete solution, but exists probably as a jelly-like body evenly distributed throughout the mass of the milk. The casein can be completely precipitated from milk by rennet and various acids and salts. The mineral acids all coagulate casein, and among the other chemicals which produce this effect may be mentioned acetate of lead (sugar of lead), sulphate of copper (bluestone), alum, corrosive sublimate, Glauber salts, and many others. Strange to say, however, casein, is not coagulated by boiling, in which property it differs from most albumenoid bodies.

The milk albumen is supposed to exist in complete solution, since it is found unchanged in the serum obtained by filtering through porcelain. It resembles closely the serum of the blood. Considering the intimate relation which exists between the milk and the blood, this similarity in composition is not surprising. But while this similarity is great, the two are not identical, and to distinguish it from the albumen of the blood the milk body is called lactalbumen.

Milk sugar is a carbohydrate similar in chemical composition to common sugar. Its atoms, however, are differently arranged, and hence its physical properties are different. Its chemical name is lactose. It is completely soluble in the milk serum. It is less sweet than cane sugar, has a lower specific rotatory power, and yields oxidation products of an entirely different character. Where milk is boiled for a long time the brown color which is produced is due to changes in the milk sugar.

The chief, perhaps only, organic acid in fresh milk is citric. The citric acid exists in considerable quantities in fresh milk in combination with lime. Lactic acid, which is developed during the souring of milk, probably does not exist at all in fresh milk.

The mineral matters in milk consist of lime, phosphoric acid, soda, potash, iron, magnesia, chlorine, and sulphur. Of these, the two first mentioned are the most important, serving especially for the nourishment of the bones in young animals. Other substances, it has been stated, exist in milk in minute quantities, but are not sufficiently abundant to possess any general interest. Milk is a complex substance, a complete food, containing every element necessary to the nutrition of the body.

The Souring of Milk

When milk is left standing for a time it curdles and becomes sour. The time required for this to happen varies with temperature and other conditions. In cold weather, with the temperature at the freezing point, milk may stand for a long time without souring. In hot weather, especially during electrical disturbances, curdling may take place in a few hours. The curdling is due to the coagulation of the casein, which is affected by a fermentation, one of the chief factors of which consists in the production of lactic acid from milk sugar. The souring of milk has long been regarded as a natural process caused by the development of activity in germs which are present as normal milk constituents. This view has, however, been shown to be incorrect by the results of recent investigations. If all external organisms could be excluded from normal milk it is perfectly certain that souring would not take place. As has already been intimated, the souring of milk is accompanied by the development of lactic acid. This acid has long been known to exist in the whey from sour milk, and it was first obtained therefrom more than 100 years ago by the celebrated Swedish Chemist, Scheele. Milk sugar, it appears, is able to furnish lactic acid under the influence of several species of micro-organisms. One of the most active of these bodies has been named *Bacillus acidi lactici*. But in different localities the active organism in lactic acid formation is not always the same. It is found to be different in different parts of Europe, and in this country our most common lactic organisms are not identical with the bacillus mentioned above. In addition to lactic acid, other bodies are produced by these organisms. Among the other products of the fermentation produced by them may be mentioned acetic acid, hydrogen, carbonic acid, alcohol, marsh gas, and nitrogen. These latter-named bodies are, however, more likely to be produced by progressive decompositions of the lactic acid than to be directly made from the milk sugar. It will be seen how widely the modern theory of milk souring differs from that of Liebig, which so long held undisputed sway among chemists. Liebig supposed that all fermentations were due to the decay of albumenoid matter. According to him all albumenoid bodies were true ferments only waiting for an opportunity for action. According to this theory the formation of lactic acid was due to the decomposition of the albumenoids; or, in other words, to direct oxidation without the intervention of any extraneous organism whatever. It was said that when cows run their respiration is faster. More oxygen is thus taken into the system. For this reason the milk from cows previously exposed to vigorous exercise sours more quickly than that from cows which have been in repose.

Since it is a fact that such is the case, this ingenious example was taken as a positive proof of the oxidation theory. To Pasteur, the great French scientist, more than to any other person, is due the credit of overthrowing the Liebig theory. He it was who first discovered and published the true theory of milk souring. The great result of Pasteur's work on this subject was contained in the announcement that all fermentations and putrefactions were due to external organisms introduced into the decomposing materials. Pasteur himself at that time (over 30 years ago) did not have a very accurate idea of the nature of the micro-organisms which produced each particular kind of fermentation. The art of producing pure cultures of these bodies grew out of Pasteur's work. In the case of milk he was only able to say that whenever lactic acid was developed there he found his "lactic yeast," and it remained for future experimenters to isolate and distinguish the *Bacillus acidi lactici*. The pure culture of the lactic organism was first obtained by Lister. A little milk was diluted with a large quantity of sterilized water. After the dilution each of several test tubes containing a nutrient solution was inoculated with a single drop of the diluted milk. If some of these tubes should fail to show any bacterial growth it would show that there was less than one

organism for each drop of the diluted milk, and therefore it was safe to assume that no drop would contain more than one individual organism.

The test tubes in which growth took place were, therefore, planted with not more than one seed, and the resulting growth would be a pure progeny of that seed. Working in this manner Lister succeeded in procuring a pure culture of the lactic organism. This method of Lister was the beginning of the scientific study of pure micro-organisms—a study to which bacteriology owes its present high position as an exact science.

Conn, in summing up our present knowledge of the souring of milk, says that all this indicates that the lactic fermentation of milk sugar is still a problem for solution, and although the casual connection between the fermentation and micro-organisms has been conclusively demonstrated, the details of the process remain to be worked out. It is certain that the souring of milk is caused by bacteria, but it is also certain that quite a variety of species may, under normal conditions, be the exciting cause and the satisfactory explanation of the manner in which the organisms work, whether by chemical or physiological processes, or by both, is yet to be given.

The Number of Bacteria in Milk.

In healthy cows it may be considered as demonstrated that the milk in the udder is free from bacteria. In diseased animals it is entirely possible that the micro-organisms may enter the milk before it is drawn. But even in the case of healthy milk it is found that it becomes infected with ferments in an incredibly short space of time. These organisms are everywhere abundant. The air itself carries untold millions of them. They cover the external surface of the udder and teats, and congregate on the hands of the milkmaid. When milk is drawn, therefore, without the precautions of sterilization it is at once infected. In one gram or milk (15 grains) bacteria have been found numbering from a very few to as high as 60,000 within a few minutes after milking. Since all these come from external sources, it is evident that the number present can be largely controlled by the dairyman. If cows, stables, vessels, and milkers be kept scrupulously clean the number of bacteria present and in the air will be reduced to a minimum. Milk taken in such conditions is in every way superior to that obtained amid filthy surroundings. The housewife who sees that the udder of the family cow is washed every day, her stall kept clean, and the milking vessels all scalded previous to use is not only securing a high-grade milk and butter, but is unconsciously fighting in the most scientific way the invisible and dangerous enemy of whose existence she probably knows nothing. By practicing still more careful means to prevent inoculation milk has obtained so carefully excluded from bacteria that it has been kept for two weeks in a warm place without souring.

Indeed, it is possible to get milk absolutely free from them, and if such milk is properly isolated from further contact with these ferments it will keep indefinitely. When, however, milk is kept in the ordinary way, and where it is purposely exposed to infection, the number of ferments therein rapidly increases and approaches the marvelous. A warm temperature, especially about blood heat, is extremely favorable to the rapid development of the organisms. Two samples of the same milk were exposed for four days, one at near blood heat and the other in a refrigerator. The latter sample at the end of this time was found to contain 10,000 organisms per gram, while the former had more than 1,000,000. The number of organisms is determined by highly diluting the suspected liquid with sterilized water and then seeding a gelatine plate with a given quantity. The number of organisms growing on the plate will be an index of the number present in the liquid under examination. The rate of increase of the organisms is also largely a function of the temperature. In a given sample of milk at about 85° F. it was found that the number of bacteria increased 3,800 times in six hours, while at 50° F. the increase was only 435 times. A temperature of from 75° to 80° F. seems to be most favorable for the rapid development of bacteria in milk. A sample of milk exposed for 24 hours at 80° F. was found to contain more than 500,000,000 per gram. Such numbers as these, of course, are quite beyond the grasp of a general idea, but even under favorable conditions the number of organisms which we take in a glass of milk is astonishing. A glass of milk will contain about 300 grams. If each gram contain only 10,000 organisms, the subject takes into his stomach with each glass of milk 3,000,000 bacteria. When the number of bacteria rises to 100,000 per gram, as must often be the case with milk on the table, the number consumed with each glass of milk rises to 30,000,000. No wonder that the physician insists on the milk which is given to sick infants being previously well boiled, and even adults in vigorous health might contract the habit of drinking recently-boiled milk with great advantage to themselves.

If drinking water contains more than 1,000 bacteria per gram, it is generally considered to be unfit for use, yet we drink without thought of danger milk which contain 100 times as many.

The amount of lactic acid produced does not keep pace with the increase in the number of bacteria. The souring of milk being a universal phenomenon, it can hardly be considered anything but a natural process. The presence, therefore, of a sufficient number of bacteria to produce this phenomenon, with its attendant lactic acid, cannot be regarded as anything prejudical to health. Indeed, sour milk (buttermilk, clabber) may be and probably is wholesome and nutritious. It is only when the bacteria are allowed to increase far beyond the numbers necessary to natural souring that any alarm need be felt. While the number of bacteria, in ordinary circumstances, increases with considerable regularity, it is not so with the lactic acid. The amount of this which is present in sour milk may even decrease as the increase in micro-organisms continues. This may be due to a struggle for existence between different species of bacteria growing in the same medium in which a portion of the lactic acid found may suffer decomposition. To secure the best and most wholesome souring of milk, therefore, the presence of a single species of organism is desirable.

It is thought that fresh milk has a certain power of destroying micro-organism resembling in this respect fresh blood. Fresh milk inoculated with bacteria will keep fresh longer than milk recently boiled and then inoculated. From this it is inferred that fresh milk has to a certain extent the power of killing the germs first added to it. Since milk and blood are so closely related, it is less surprising to find them possessing this highly-interesting property in common. The increase of the number of bacteria in an exposed milk is not indefinite. After a few days this increase ceases. This is not due to lack of food, for there is still left in stale sour milk abundant nourishment for all kinds of micro-organisms. As in all forms of fermentation, it is found here that the activity of the ferment is diminished as the products of its action increase. If some means could be found for the removal of the lactic acid and other products of the bacteria, including their own dead bodies, it is certain that new organisms would continue to be formed and their activity would continue indefinitely.

Practically, these facts are of the highest importance to the housewife and dairymen who seek for good milk and butter. Milk which is to be kept for family use should be covered as quickly as possible after being drawn and kept cool. Cows and stalls must be kept absolutely clean. All vessels with which the milk comes in contact should be scalded before using. The fight against bacteria is best carried on by that attention to neatness which is the mark of good housekeepers and the glory of an American home.

Fermentation of Milk by Rennet.

It has been shown how milk may become sour and the casein finally coagulated by the action of bacteria. It may seem from this that the practice followed by cheese makers of coagulating the casein by rennet indicates that fermentation is not the sole cause of such changes in milk. In fact, it is well known that the mere precipitation of the casein is not necessarily due to a fermentation, since this is easily accomplished by the use of acids. Rennet is an active principle derived from the stomachs of young animals, usually calves. Its addition to milk imitates, therefore, the digestive processes to which milk is subjected when it enters the stomach of a living calf. This property of rennet has been known from the earliest historic times. It is only, however, within a few years that the true nature of the action of rennet has been understood. The curdling of milk by rennet is due to a true fermentation, but in this instance the ferment is dead instead of living, as is the case with bacteria. Such ferments are called unorganized to distinguish them from the living variety.

The distinguishing difference between the action of micro-organisms and rennet in milk is found in the fact that the latter does not act on the milk sugar, producing lactic acid. Any acidity which the curd produced by rennet may possess is due to the concurrent action of bacteria.

The most active digestive ferment furnished by the coats of the stomach is pepsin, and it would be natural to suppose that this substance was the active principle in the fermentation produced by rennet. It has been shown, however, that pure pepsin will not coagulate casein, thus showing that the gastric juice has more than one unorganized ferment. It may be taken for granted that the action of rennet in milk is entirely independent of the formation of an acid. As has already been shown, any acidity which attends this kind of fermentation is due entirely to the action of micro-organisms. When bacteria are carefully excluded the complete precipitation of the casein by rennet is not attended with any acid reaction whatever. It is, therefore, certain that this unorganized ferment does not act on milk sugar. It is thus seen that the natural curdling of the milk and that produced by rennet are effected by entirely different means. One is secured by the action of an organized ferment directly on the milk sugar, producing an acid which in its turn coagulates the casein. The other is produced by an unorganized ferment acting directly on the casein itself, and not affecting the milk sugar at all. The active ferment in rennet has been isolated and obtained entirely free of pepsin. To this principle the name *lab* has been given. This ferment is not confined to the stomach of the calf, but is found in a large number of animals. It is more abundant in the young than in the adult. As the animal grows older and milk ceases to be the natural food, the production of lab by the gastric glands becomes less abundant.

It is probable that the action of the lab consists in splitting the casein up into soluble and insoluble portions. The presence of the chloride of calcium greatly hastens the curdling action of rennet. Common salt and chloride of potash also favor the process. The ferment of rennet has been found in other organs than the stomach of mammals. It has even been detected in different orders of mammals. It has been found in fishes, birds, and even in plants. Certain bacteria are known also to produce a ferment which acts in a manner entirely similar to lab. Whether or not all these ferments are identical is not known. It is only certain that they produce the same effects on milk. Late investigations point to the production of two classes of proteid bodies due to the action of rennet. One of these is coagulable at a temperature of about 180° F., and is termed *caseogen*. The other is not coagulated until a temperature near that of boiling water is reached, and it is called *hemicaseinalbumose*.

In summarizing our present knowledge of the curdling of milk by rennet, Prof. Conn says that the casein in milk exists in a peculiar condition, seeming to be in a semi-solution or colloidal (glue like) state. While it is not capable in this state of rendering the milk sensibly viscous, yet it can all be filtered out by pass-

ing the milk through a porous porcelain plate. To distinguish true casein from curd it has been called caseinogen. When precipitated by a small quantity of acid it seems to be thrown down without change. The active principle of rennet, however, has quite a different effect upon it, changing it chemically. It is broken up into two distinct proteids, one of which is easily and the other difficultly coagulable. The former is readily precipitated by calcium salts, and since these are always present in the milk it is at once precipitated. The other body being soluble, is lost for cheese making, and goes into the whey. The amount of nitrogenous matter thus lost is further increased by the action of bacteria, which have the power of digesting even the curdled casein. For this reason, in cheesemaking the rennet should be used as quickly as possible in order to forestall the action of the micro-organisms. The rapidity of the action will depend on the quality and amount of the rennet used and the character of the salts present. Alkalis retard the action, while other salts of soda and potash and the salts of lime hasten it.

The active principle of rennet is a non-living chemical ferment, which is distinct from the other ferments in the gastric juice. It has been given various names, among them, lab, chymosine and pixine. It seems to be somewhat widely distributed among animals and plants, and is a common product of bacteria growth. It is killed by a temperature of 160° F., and acts best at about 90°–95 F.

The above is about all that is known at the present time concerning this interesting substance, so vital to the process of cheese making.

Influence of Electricity on the Souring of Milk.

Everyone who has had anything to do with milk products has noticed the effects produced upon milk during electrical disturbances. The expression that the thunder has soured the milk is not an uncommon one among farmers. Indeed, it is a popular belief that thunder storms will sour milk, a belief so widespread that it would seem there must be some foundation for it.

That souring frequently occurs during a thunder storm cannot be doubted. It is very questionable, however, whether there is any direct connection between the thunder storm and the souring of milk. One of the first theories in this connection was that the ozone produced by the electric spark was the active principle in the souring of milk. Actual experiments, however, made with electrical machines, in which large quantities of ozone were formed, gave results opposed to the theory. Prof. Conn found that he could not curdle milk by means of an electrical discharge, even though abundant ozone was formed. Further experiments have shown that sterile milk, that is milk which has been sterilized by heat, is entirely unaffected by electricity, and remains for months unchanged after the electrical spark has been discharged over its surface. When milk did turn sour under the influence of the electrical spark, it was found by examination that this souring was due to the bacteria which were formed. As a general result of all the experimental work which has been done upon the subject, it must be concluded that electricity is not of itself capable of souring milk, or even materially hastening the process.

Further, it is certain that the ozone which has developed during the thunder storm cannot exert any great influence in this matter. It is probable that the connection between the thunder storm and the souring of milk is one of a different character. The conditions which produce a thunder storm are those which are most favorable to bacterial growth. The warm sultry condition of the atmosphere is productive of a greatly increased activity in the multiplication of all forms of micro-organisms. It is, therefore, not at all strange that the rapid souring of milk should occur at the same time with thunder storms; in other words, that they should occur together. Milk which is deprived of bacteria will certainly keep very well during thunder storms. Dairymen find no difficulty in keeping milk perfectly fresh during thunder storms, if it is cooled immediately after drawing from the cow and kept cool. On the other hand, during warm, sultry weather, even if there be no electrical disturbances, it is found that milk will sour just as readily as when such conditions are accompanied with thunder storms.

Prof. Conn, in his summing up the evidence on this subject, says: "It is safe to conclude, therefore, that in all cases it is the bacteria which sours the milk, and if there seems to be a causal connection between the thunder and the souring it is an indirect one only. Climatic conditions have hastened bacterial growth and have also brought on the thunder storm. The same conditions would affect the milk in exactly the same way, even if no thunder storm was produced, and this our dairymen tell us frequently happens during the warm, sultry, Summer days."

A Cow Milking Dog.

A member of the New York Produce Exchange, who lives at Hillsdale, N. Y., has a fine registered Jersey cow, which he keeps for her excellent milk-producing qualities. Recently the flow of milk was considerably diminished, and the cause could not be ascertained. There seemed to be no trouble with the cow. She was in as good health as ever, and the mystery remained unexplained until one day a farm hand saw a dog in the pasture with the cow, who was taking his breakfast from her udder. The cow appeared to be greatly gratified with the operation, and the farm hand called the attention of his wife to the scene. Since the cause has been discovered the cow has been placed in the barnyard during the night, but the dog has on several occasions been seen with her in the pasture lot during the day.

The story is well authenticated, since the farm hand and his wife are prominent members of the Methodist Church.

Timber for Railroads.

There are a good many people in our country who seem to be very apprehensive about the supply of our timber. They intimate that with the present demand for wood our supply cannot be long kept up, and for that reason they are anxious that our timber supply should be looked after and kept up. It is worth while to see on what facts their fears are grounded. The Commissioner of the Bureau of Forestry has been gathering statistics, and the results obtained are quite startling. From the table compiled it is found that the railroads are the greatest users of timbers, and the demand for railroad ties is greater than the demand for wood by any of the trades. Over 1,000,000 acres of timber land are cleared annually in order to keep up the supply necessary upon our railroads. The investigation shows an annual consumption of 60,000,000 ties for repairs and 13,000,000 for use in constructing new railroads, with the demand increasing yearly. These 73,000,000 ties use up 365,000,000 cubic feet of timber. The enormity of these figures can hardly be realized, and the conclusion adopted by the Commissioner of the Bureau of Forestry is that our supply will not last very long if this demand is kept up. To overcome this obstacle the Bureau has been led to make inquiries to see if metal ties could not be substituted for the wooden ties. While it may cost more to use metal ties, yet the length of service would, in the long run, make them cheaper than the wooden ones. In England it was necessary for the railroads to use metal ties, since the wood supply became so scarce and the prices increased that it was as cheap to use iron ties, with better results, than it was to use those made of wood. In 1887 the London and Northwestern Railway began the use of steel ties, and it was found that they were far more durable and economical than wood. Even in our own country, in New York City, metal ties have been used, and a lesson in economy has been learned. The Bureau will endeavor to have the use of these metal ties extended, so that in time to come they will be in general use by all the railroads of our country. The Commissioner of the Bureau states that with ordinary management 10,000,000 or 15,000,000 acres would suffice to keep the supply in rotation, but with the exhausting process now going on 50,000,000 acres will be needed to keep pace with the consumption. The moral that can be drawn from these statements is for farmers to properly observe the lessons of Arbor Day, and if this is kept up our supply of timber will last some years longer.

The Taste of Horseflesh.

Probably all of our readers know that in Paris old and decrepit horses are taken to slaughtering houses and killed, and the meat sold in the same way our beef is sold. In fact, this business is becoming quite important in the French metropolis, and the number of slaughtering houses and places where meat is sold has increased wonderfully during the past few years. But you will wonder how the horseflesh tastes. We cannot tell you how it tastes to the native Parisian, but we give the experience of an American army officer who was compelled to eat the meat of horses.

"You never ate horseflesh, I suppose," said Lieut. Russell, of the 7th U. S. Cav. "I have seen the time when I ate it with genuine relish, and that, too, without any salt. It was in 1877, during Gen. Miles's Nez Perces campaign. We had followed the renegrades up the Missouri to its confluence with the Yellowstone, and the chase was so exciting that we didn't realize how low our larder was getting until it was drained, and we were getting too far away from the base of supplies to replenish it. The game had all been driven out of the country ahead of us by the fleeing Indians, and when we finally caught up with the redskins, and forced them to fight, we had almost nothing to eat for several days. We captured about 700 ponies from the Indians, some of them so round and sleek and fat as to appear to us the finest meat in the world. Our butchers killed the youngest and fattest of the ponies that night after the battle, and as soon as they were skinned and dressed we had a feast that would have made Lucullus turn green with envy. We lived on this pony meat several days. It was cooked without salt, and roasted over a spit, like a barbecued beef. The meat had a peculiar sweet taste, not at all palatable, when I think of now, and it was so fibrous that we could pull it apart in great strings. But it kept us from starving, and I, therefore, can heartily recommend pony meat to people in dire straits."

A Confidence Man in Africa.

Even the poor far-away natives of Africa are not free from the schemes of confidence men, and one recently made a tour through a portion of that country and worked the simple natives for all they were worth. He had a bag of quack nostrums thrown across his shoulders, and his knowledge of the contents of the bag was very limited. When he went into the interior of the country he heralded his approach and dwelt upon the wonders of his medicine. The ignorant natives flocked to see him, and the sick were brought to secure the benefit of his wonderful treatment. Of course, he received no money for his services, since the natives of Africa have no monetary system. He took his payment, however, in cattle, and drove them before him when he went to a new field. He did not remain in one section very long, but sought new fields after he had been at one place for a week or two. When he returned to civilization again he had a herd of 1,600 cattle, out of which he buncoed the natives. A German agent in the southwest African possessions of Germany wrote of this to his headquarters in Berlin, and he said that it would be unsafe for any person to go in the interior with medicine now, since the natives have found that they were deceived by the man with the quack nostrums.

AN AGRICULTURAL LECTURE.

The Strength of the Grange the Only Way to Promote the Interests of Agriculture.

BY HENRY TALCOTT.

PRESENT DEPRESSED conditions of farm lands and low prices, although very disheartening and disastrous to farmers of our old Eastern States, are very greatly over-estimated and wrongfully assigned as proof of a failure of agriculture to pay a fair reward for labor. The continual cry of complaint has no such just cause for it, as our press and demagog politicians claim. A love of office and desire for power is at the bottom of much of their action, and really hinders the needed reforms, because parties in power are always jealous and desire all wise and just legislation to be credited up by the people to them or their party. Consequently, it is almost impossible to secure the passage of reform laws by the party in power if offered by the opposition, no matter how wise and just.

It is clearly the best policy of agriculturists to endeavor to mold all parties in the interest and good graces of agriculture. This is the true mission and practical working of the Grange. To attempt party organization of farmers alone against the world looks supremely silly. We can never prosper upon the ashes of other human industry. The Grange so views the matter, and governs her line of action accordingly. To be prosperous as farmers we need the highest prosperity of all other classes to pervade the land. Consumers should by governmental law and favor be accorded all the just legislation needed. To that end manufacturing industries must have encouragement from farmers, not power for legalized robbery; but that just and humane power which brings with it fair competency, comfort, and happiness to this class of consumers. We also need the fair prosperity of all forms of labor, and farmers must so work and vote to secure that end. We are not enemies to the trades or professions, neither do we look with envy upon their honest acquisitions.

Thus far the Grange is truly at peace with all mankind. But we are most determinedly opposed to that class of gamblers and legislation that makes it possible to unsettle the values of our farm produce or farm lands. Because of this we shall battle to the end, until dealing in options and all such classes of crime shall be rendered odious and severely punished. We shall equally cry out and work against the manufacture and sale of counterfeit food products. The Grange will always insist upon honest and pure food stuffs being sold to our people, and thus far farmers have had to furnish the voice and votes that has accomplished all such needed reform.

We, as an organization, are opposed to the rapid opening up to cultivation of vast areas of agricultural lands, and made available for crop production, because we know this great extension has already been the prime cause for depression of prices in farm lands. Since the war the increased transportation advantages, caused by three lines of railway across our continent, with all their intersecting feeders, has made agriculture possible on millions of acres in advance of its need for our people. These lands are cheap and so attractive that it has caused an exodus from the Middle and Eastern States, and the abandoned farms of those localities is not proof-positive that agriculture is suffering unduly from unwise or wicked legislation. We are simply confronted with the great problem of more land than people, and who can blame farmers of the present day from taking their choice. The Sunny South has also contributed largely to the depletion of farm husbandry of the North. Millions of people have left the cold and rigorous climate and unpleasant features of Northern farm life and have migrated South.

Over-production cuts no such figure as grain gamblers would have us believe. The fact is, we do not have, nor are we likely to produce, any great surplus of farm crops. The rapid increase of our population makes that almost impossible; but the true cause for much of the decline in prices of farm produce is an honest, just, and inevitable result of lessened cost of production.

There is no valid reason why farm produce should not be cheaper, as well as all other goods. Agricultural machinery in such great abundance annihilates cost of production, and renders possible what was utterly impossible 20 years ago. The lessened cost of farm lands from its great available additions makes the investment of farm capital less.

The rapid and perfect work of machinery makes it possible for one man to produce the crops to-day that 20 years ago would have required many hands, and this lessened cost of production makes it right and just that the crops should be sold for a lesser price.

Farmers must face the situation, and with heroism adopt the change. They must compete with lightning and steam power, and do their part in making this wonderful advancement of the age. The skillful teacher in agriculture tells you how to do it. You now can plant potatoes by machinery so fast that one man can do the work of 10; you can dig them by machinery fully as fast and leave them perfect; you can lessen the cost of a crop so its production entire will not cost more per bushel than it does to dig them alone in the old idiotic way by hand with a hoe.

You have no just cause for murmur and complaint if other men, who do make use of these new intelligent agencies, produce for less and sell for less. You cannot expect to compete with them unless you get aboard the same train and move with the spirit of the age.

In every department of agriculture the inventive genius of man is fast working reform and making an increase of both quality and quantity possible, and the true Granger has got to accept and use it. These forces we must recognize and encourage. They are legitimate and honest; but, of course, there is much in legislation that is actually unwise and wrong.

It is wrong for our Government to permit the watering of corporation stocks, depressing and creating fictitious values, making absolute steals of the whole entire business whereby a handful of men now own and control more than half the wealth of this nation; and it has all been secured by them through underhanded advantage made possible by unwise laws. The Governmental policy of unrestricted rights to patentees is vicious and unjust to give to man legalized power to rob his neighbors for 17 years. It is an outrage upon society. The legal right to monopolize manufacture and sale if enjoyed by one person or corporation ought to be restricted to a fair and honest scale of profit. This Governmental incubator to hatch and breed millionaires should be overhauled and reformed to the heart of the whole business.

The Grange and the farmers are the only power that will cause these iniquities to be investigated. The city policy has been to foster crime and unscrupulous production. Our largest maple sirup camps in America are in the basements of city stores, miles away from a maple tree. The handsomest butter of the age is a city decoction of hog grease and cotton-seed oil, and so on through all the list of city industry. It is hard to find a city court, judge, or jury that will convict or punish for such crime, because it strikes a blow to city strength and prosperity that blunts the appreciation of virtue and honesty in those places and makes it necessary for the growing of honest men and women on the farm to save this wicked world.

THE WORLD'S FAIR.

Some of the Things Which Will Be on Exhibition There.

William L. LaFollette, Superintendent of the World's Fair agricultural exhibit for the State of Washington, is arranging for a complete model farm in miniature for the Washington exhibit. He will have a farmhouse, barns, fences, and fields of growing grain. There will be fields of Summer fallow, with tiny gangplows and furrows. Thrashers, binders, and all other farm machinery will be shown in miniature as they appear when in use in the West. Mr. LaFollette will also erect a large cold storage safe with glass sides and neatly-arranged shelving The fruits of Washington will be shown in this during their season, and collectors throughout the State will renew the supply by sending fresh fruit daily to Chicago by express. First, the safe will be filled with luscious strawberries, and from that on during the succeeding seasons, as the fruit ripens, the cold storage fruit display will be kept replenished with all varieties of ripening fruit from May 1 to Oct. 30, 1893, or during the entire time the Exposition is open.

"Nicaragua is going to have a fine exhibit at the Columbian Exposition," said Dr. Horacio Guzman, Nicaraguan Minister at Washington and Nicaraguan Commissioner to the Exposition. "In proportion to its size and wealth no country will have a more creditable display. We intend to erect a small but artistic building, and our exhibits will be unique. Civilization existed in Nicaragua and Mexico in prehistoric times, and in our republic many traces of it has been found. Recently, near Lake Nicaragua, old stone statues have been found, and other relics, the handiwork of the ancient dwellers in Nicaragua. But the greatest discovery of all was a statuet of gold fashioned by the goldsmiths of those times. This little figure shows that the prehistoric race knew as much about working in gold and silver as the silversmiths of to-day. The gold statuet will be placed on exhibition at Chicago. Our prehistoric exhibition will attract considerable attention. The mineral resorces of the republic, as well as its agricultural, will be shown. We have advanced rapidly and wish the world to know it."

Hip Lung, the wealthiest Chinese merchant in Chicago, together with several influential Chinese of Canton, San Francisco, and New York, have applied for space for a big tea house.

The World's Fair buildings will be dedicated on the 21st of October instead of the 12th, Congress having passed a bill to that effect. Oct. 21 is the exact anniversary of Columbus's landing, allowance being made for the correction in the calendar made by Pope Gregory. The change of date of dedication was made in the interest of chronological accuracy, and also to oblige New York City, which will have a Columbian celebration on Oct. 12.

It is announced that the Postmaster-General of the United States has decided to issue a new series of postage stamps with designs appropriate to the commemoration of the discovery of America.

New York will exhibit sections of all the trees which are indigenous to the State. Of these there are 43 species and 85 varieties, a number which is not excelled, it is claimed, in any State in the Union.

Extract from a Chicago society journal: The banquet of Mr. Josh Cummings was extra fine. A sad accident marred the menu, however, when Uncle Billy Plunger broke his arm while sliding to the plate in the eighth inning. Uncle Billy always was a good feeder, etc.

EUROPEAN AGRICULTURE.

What Success Has Rewarded the Farmers of the Continent.

Special correspondence THE AMERICAN FARMER.

PARIS, FRANCE, August, 1892.

THE wheat harvest is now so far completed that the total yield, after all the prognostics, is estimated as a good average and superior to that of last year. Other cereals, rye excepted, which is satisfactory are deficient. The straw of every grain crop will be short. This only adds to the difficulties farmers must be prepared to encounter in carrying stock over the Winter and Spring months, as the hay harvest has been lamentable. Switzerland and Holland generally come to the aid of France when dry fodder runs short. This help cannot under present circumstances be afforded, these countries themselves lacking supplies. Root crops have substantially recovered from adverse weather condition, beets and potatoes especially. It is calculated that the average richness of beet juice in sugar will this Fall amount to nine per cent. That is not bad, especially when it is remembered that about 10 years ago the percentage on an average was but five to six. In Germany and Russia some first-class sugar beet farmers can raise roots yielding 14 to 15 per cent. of sugar, but then they leave nothing undone in the preparation of the soil—in securing a mellow seed bed, having requisite plant-food within reach of vegetation, and, above all, employing only first-class seed, obtained from noted raisers. Belgian growers do not now fear to add a little kainit with the usual fertilizer—proof that potash does not act prejudicially in the extraction of the sugar. Were the French farmers as careful in their attention to the conditions of sugar beet raising as are the growers in Germany, Russia, and Austria they could double their profits.

The vintage will be all around good, the exceptions being unimportant. It will also be a fortnight earlier, an unmistakable proof that the quality of the wine will be excellent, while the qantity will be satisfactory. All the replanted vineyards from American stocks continue to realize every expectation. As they increase in age the wine will possess more mellowness.

I understand that a second large company is being started to replant vineyards ruined by the phylloxera, and that the proprietors are unable to handle. The company will, in exchange for an exclusive lease of 20 years, meet all expenses, pay a part division of profits, and on the expiration of the lease hand back all to the owner.

The potato crop causes no anxiety. The season was not detrimentally dry; that is to say, drouthy. Not being wet may explain the absence of the disease, for the fungus exacts humidity for committing depredations. In any case sensible growers are fully prepared for the enemy; the soil is well prepared and enriched; the best seed obtained, and the Bordeaux wash and the spraying instruments kept as ready as if attached to a fire brigade. France raises the tuber now generally on the flat, and interferes as little as possible in the stirring of the soil between the spaces of the plants. It is only now we commence to recognize the length of the root fibers of the potato, and of the scientific truth that it is by their hairy knots that the roots manipulate an i the plant absorbs and assimilates its food. France, save in the towns, is as much a potato-eating country as ever poor Ireland was, or is. The tuber, a little maize, rye, or buckwheat meals, these are the staple food supplies of the rurals; and after meeting home wants and export demands, chiefly to South America and England, France has more tubers than she can utilize. Hence, why the cultivation of the potato, as in Germany, for industrial ends—fecula and whisky—is marching in seven league boots. American maize, until struck with the tariff of $10 a ton, was one of the chief sources of the raw material for home-distilled alcohol. The French are now encouraging the cattle potato to replace American corn.

A great many Shire horses can at present be met with in France, and splendid animals they are. They will cut out the Percherons in heavy draft work, and are considered to be hardier and thriving on ruder fare. They are cheaper into the bargain. But it would be better to rear the Shire horse rather to import it, paying special attention to the brood mares, that weak point in all French horse breeding. A good breed of hackney horses is required in France, if under 15 hands. The main roads of the country are, as a rule, well kept in repair.

In the butter-making districts opinion is divided over the merits of the Guernsey and Jersey cows; if one gives richer, the other, it is alleged, gives more milk. Perhaps the question will be decided when French dairymen give fancy prices for model cows, and rely on bulls less inclined to beef or fleshy points. Perhaps, also, agriculture has shut its eyes too long to the necessity of dairy points in bulls.

It is not uncommon in the mountainous districts of France to farm out milk cows for the Summer season. Indeed, it is only the system adopted in Switzerland among the co-operative cheese dairies and their accessory—shoat rearing. The principle is being tried in the case of sheep. The latter, when judiciously managed, pay in the long run by wool, by lamb, or by manure. Fifty or 100 sheep are farmed out by the year, on condition that the hirer be reliable and in a position to maintain them. He will receive half the clip and one lamb, and must always replace any sheep when returning the flock. The lender occasionally claims the right to take home at the close of the season a certain number of ewes for house lambing. In the case of Percherons and Boulounais foals, these are farmed out in many departments adjoining Calvados and the Eure, being returned when aged two years for a finish up on the rich pasture lands of Normandy proper.

Co-operative farming, that scientific machinery wounds and heals at the same time, is not a modern institution for France. It is better known by its generic name, the *metayer* system. The conditions of its working only are different, but as a principle contains more, the element of even-handed justice, though in the rough, than any other plan of profits-sharing. Primarily, it must not be confounded with the agricultural syndicates, where the owner unites to purchase materials in common, cheaper and better than if acting singly. As yet the association for the disposal of products is but in its infancy. In the *metayer* system the land-owner is really only a sleeping partner. He provides the capital, whether represented by live or dead stock, and pays all taxes. He entrusts the working of this plant to some shrewd local peasant and his family, occupying a position between a superior farm laborer, a steward, or a small land-owner. After a certain mite off is made for rent, imposts, wear and tear of plant, cost of first materials—against which the steward places the labor of himself and family—he and the land-owner go halves in the profits, and losses as well. It is only an Irishman's co-operation that would allow any element of inequality to enter into profits-sharing, whether in industry or in agriculture.

It is no secret that the number of small landed proprietors in France is on the wane. Neither the personal experiences of Lady Verney, nor the annotated Arthur Young's travels (by Miss Edwards), can alter the fact. And Prof. Levasseur has just demonstrated that one of the chief causes of the decadence of the French population is the lilliputian division of the land, where a married couple can scarcely support themselves, much less a family; and where a few children may be born, they are ripened off as rapidly as possible, to find work in towns as domestic helps or factory hands.

No small farming can pay in France [in presence of the competition with America, India, and Australia for breadstuffs, meat, dairy products, fruit, and wool. There must be large, scientific farming, and the directors of even extensive homesteads must syndicate to buy cheap, and sell directly, independent of mercenary intermediaries, if they are to hold their own. Where the small peasant can supplement his land outputs by his family finding employment in some collateral industry, that is the "struggle of the fittest" under a new condition.

Larger breadths of Winter cereals will be sown this year. Wheat is now becoming the favorite crop to succeed clover, and the plowing under of green crops for manure is rapidly progressing. Hungarian *Moha* will likely give an account of itself this Autumn. Several experiments have been made with it as a fodder plant—green or hayed—as a resisting drouth crop. The French have an enviable climate, not an ungrateful soil, and were the farmers to pay better attention to the physical amelioration of the land, its enrichment, and the selection of suitable and sound seed, and sowing the latter in lines, they would, with the energy and "go" of the national character, make France rapidly a Land of Goshen.—PAUL GREVY.

Goose Farming.

We have heard of chicken ranches, but here is a new scheme for making money out of the feathered tribe. It is said that if a man begins by buying 1,000 geese, at the end of six years they will have increased at such a rate that he will be in possession of 54,000. These can be picked twice a year, a pound of down selling at $1, and the coarse feathers at 65 cents. Now, supposing that every goose yields one-half pound of each annually, one could soon grow amazingly rich at this rate.

Goose farming is becoming a fad in Washington, and is said to have eclipsed all other industries which have been tried for amassing fortunes in that section. If geese are bought in one State and the owner wishes to take them to another he has them shod and drives them, which saves transportation. The shoeing of geese is done by placing little covers of thin leather on their feet, and thus they are enabled to endure long journeys. Barney Quinn, Court Bailiff, Helena, Mont., relates the following sad story, proving by practical experience that there is truth in these facts:

"Several years ago I ventured into the goose-raising business in Colorado. I purchased 1,000 geese in Kansas, had them shod, and drove them all the way to northern Colorado. I was happy with my lot until the cold weather set in, and one by one my gooselets faded. I had lost about 50 of them when a friend suggested that I blanket them. This I did. Each goose had a little coverlet made for it which I encased it in—just as you see poodle dogs nowadays. I'll never forget what a beautiful sight it was to gaze from my cabin window moonlight nights and look upon my sea of gooselets with their little red coverings. It was a grand sight, sir, but the cold weather was too much for them, and I lost nearly 300. Then I made up my mind to go to New Mexico with my flock, where it was warmer. I had their shoes put on and off I started. Through the entire length of the State of Colorado I trudged, my feathered tribe and I. It was a tedious journey, but the sight of my herd nerved me and I dreamed of golden success when I reached New Mexico. Then I came to the Rio Grande River. In plunged my flock of geese into the stream to make for the opposite bank, but, alas! before I realized it they were all drowned with the exception of five, which I saved; I had forgotten to take off their shoes, and they couldn't swim."

South America, in some sections, would not prove to be a good place for some of our farmers. Grasshoppers, so it is stated, attain the length of five inches, and often measure from tip to tip over 10 inches.

NEW ZEALAND SHEEP.

A Country with Excellent Mutton and Superior Wool.

BY J. N. INGRAM.

NO OTHER country in Australasia is so well suited for the growth of sheep as the Islands of New Zealand. The climate is so mild that in most parts of the Colony the animals can graze out on the plains and hills all the year. The islands extend from 34° to 47° south latitude, and passes through 13° of latitude. The seacoast stretches 1,500 miles from the lemon groves in the semi-tropics of North Island to the glaciers on the hights of Mount Cook on South Island. In this great range of climate almost every food-producing plant flourishes. So luxuriant and perennial is the vegetation that but little feeding is ever necessary. The best grasses have been imported and the pasturage improved. The country is well watered, and the turf grows throughout the year.

The islands are not afflicted with the great and prolonged dry seasons that prevail in Australia, nor are they subject to the heavy snows of the Rocky Mountain plains and the Canadian Dominion, or the bitter Winters and freezing winds on the prairies of our Western States. Owing to the uniform climate and the fine breeds of sheep, New Zealand produces a superior quality of wool. It supasses all the Australasian wools for its reception and retention of bright colors. The staple is long, soft, and silken in texture. It is extensively used by British, German, American, and French manufacturers to mix with and improve the inferior quality of wool from other parts of the world. The staple covers a great variety of wool, and is suited to the production of various kinds of goods. Many of the sheep were imported from Australia; but the finer breeds were shipped from Spain, France, and England.

Most all the breeds of sheep in the world do well here. Merinos, Lincolns, Leicesters, Romney, Cotswolds, and Southdowns all flourish in New Zealand. The cross breeds also improve.

The colonists have made such extensive efforts to improve their sheep that the islands are now noted for their superior varieties. So fine is the quality of the sheep that the wool growers in Australia and Tasmania now order animals from New Zealand to improve their flocks. The elevated topography of the South Island furnishes an extensive and a varied character of grazing lands, and carries the largest number of sheep. The island has an area of 57,000 square miles. A range of mountains called the New Zealand Alps extend through its entire length. The chain rises to a hight of 6,000 and 8,000 feet. Some of the higher peaks are 12,000 feet, and are capped with eternal snows. The slopes of this great chain of mountains form an immense area of hills and higher plateaus. The higher elevations are covered with dense masses of forests and underbrush. But on the ranges along the timber line are great stretches of uplands, and here and there the basins of elevated valleys, covered with luxuriant turf. The foothills are also overgrown with grass, and furnish rich pasturage for the flocks. Along the seacoasts, fronting the mountain chain for 500 miles, extends a wide and fertile plain. These great plains are covered with ranches devoted to grain culture and dotted with farmhouses. A railroad traverses the plain from one end of the island to the other, and many villages cluster along the sea. The great sheep runs are owned by the ranchers on the plains and in the villages. Alternate areas of the plains are sectioned off and inclosed with wire fences for sheep runs, and millions of animals graze on the ever-growing turf. But in the Spring of the year, when the snows have melted from the high plateaus and from the hills on the mountains, the virgin soil becomes covered with heavy herbage and offer fine pasturage. Then the flocks are driven from the plains up on the high elevations on the ranges, and graze on the rich grasses under the peaks of the eternal snows. Tents are erected on the mountains by the herders, and they live an isolated, lonely life with their flocks.

For nine months the shepherds spend their days on the ranges and their nights in solitary vigils among their grazing wards. No wild animals live on the mountains to ravage the flocks; and the bleat of the sheep and the gambols of the lambs are the only sounds which the herder hears to break the silence of the hills. But the bracing air, wild flowers, fine mountain views, and the stars at night vary his life in the highlands.

Although there are no wolves on the islands, or any beasts of prey, to devour the sheep, the wild mountain Kea is a terror to the flocks. This bird is a species of hawk, with the talons of an eagle and the beak of an owl. It is a feathered cannibal, that eats its victims alive, with the warm blood running from their bodies. After darting down on the backs of the lambs, it tears away the wool and flesh with its claws and thrusts its bill into the kidneys for the fat, and the animals die a horrible death. Thousands perish annually by the Keas.

In the Autumn, when the frosts have nipped the grass and the early snows begin to fall and the Winter storms to threaten, the shepherd collects his flocks and drives them down from the mountains into the warmer plains along the seashore. Here the sheep spend the cold season free from the heavy snow and freezing nights on the ranges. Many flocks are held in large bodies. One hundred and fifty ranches have 20,000 sheep each, and a number of the largest wool growers have 250,000 sheep each. The ranchers fence their sheep runs to avoid trespass and save labor. They inclose the grazing grounds with wires stretched from wooden posts. Many of the large runs are on Government lands rented out to the ranchers. The rates charged for the land by the Colonial Government is 12 and 15 cents per head for the flocks. The shearing is now largely done by machinery.

The clipping season varies according to the degrees of latitude and the altitude of elevation. This country has a length—north and south—of 1,500 miles, and has a great variation of temperature. As the islands are south of the equator they have their Winter during the Summer in the United States, and the shearing months vary from those in America. On the North Island the clips are made in September, but in the South Island the shearing begins in January and extends into March. The shearers receive 3½ and 4½ cents a head for clipping the animals.

The great body of the Canterbury merino sheep are raised on the large runs on the plains, as the mountain region is too rugged and rough for the growth of the lambs. The Province of Canterbury is the richest and largest wool-producing section of the South Island. It covers an area of 8,600,000 acres, and extends from the base of the Alps to the seashore. The great plains contain 4,000,000 sheep.

The ranches have from 10,000 to 100,000 acres. The Canterbury merino wool is the finest grade produced in the Colony. It is of extra quality, long, soft, and silky. For many uses it is considered better than Saxony wool, which has long been regarded as the finest wool grown. The wool receives fine and light shades of colors, and indeed rivals satin in its reception of delicate tints. It is also famous for retaining colors.

Fine breeds of sheep thrive, and extra grades of wool grow all over the Province; but the lands in the northern part of Canterbury are thought to produce the finest wools found in New Zealand. The merinos are best adapted to the climate, and do better than any other breed. The merinos are of different grade, and produce varieties of wool.

One run between Christ Church and Dunedin keeps 10,000 merino ewes and 30,000 cross breeds of Leicesters. Cross breeding is extensively carried on to produce different varieties of animals and various qualities of wool. The cross-bred wool stands next to the merino in the amount produced, but does not equal the pure breeds in quality. The most popular cross breeds come from the lambs of the merino ewes and Lincoln rams; the lambs at maturity are often crossed with the Lincoln rams, and the ewes of this breed crossed with the merino ram. This cross produces a hardy breed of sheep, with large bodies, and are favorite meat animals. The prices paid for pure-bred sheep are sometimes fancy and indeed extravagant. Fifteen hundred dollars has been given for pure-bred rams, and as high as even $4,000 has been paid for a single ram of extra fine quality.

Some of the wool growers devote their attention entirely to the production of the finest breeds of sheep and the best grades of wool. There is, however, a large market for the common grades of wool, and a greater amount produced by the common class of sheep. The profit, therefore, on the lower-grade animals is greater, and their increase is more extensively encouraged.

When the clip is taken from the animals it is assorted and placed in "packs" according to its grade; it is then pressed into bales ready for shipment. The bales generally weigh about 400 pounds each. The fleece is hauled to the railway stations by teams and shipped by rail to the seaports. Warehouses there receive the wool and transfer the cargoes to the vessels. The goods are then consigned to the wool buyers at the different markets in the Old World. The entire cost of shipping the staple to London is four cents per pound. The freight to New York and Boston, via California and Panama, is one and a half cents per pound.

The commodity has now become one of the chief exports of the colony. Year by year it has grown in bulk and increased in quality. In 1851 the islands had 225,000 sheep, and within 10 years the flocks had increased to 2,076,000. In 1883 the sheep had numbered 13,288,000. The production of wool has now become the greatest industry in New Zealand, and its value year after year soars higher into the millions. It now yearly exceeds by $15,000,000 the highest annual output of gold.

The following statistics will show the growth of the wool industry on the islands through a number of years:

Year.	Quantity, pounds.	Value, dollars.
1870	37,039,000	8,178,900
1871	37,793,000	7,709,400
1872	41,886,900	12,182,000
1873	41,535,000	12,971,800
1874	46,848,700	13,606,500
1875	54,401,500	16,311,100
1876	59,853,400	16,299,900
1877	64,481,300	17,562,900
1878	59,270,200	15,805,400
1879	62,220,800	15,006,900
1880	66,860,100	15,212,600
1881	59,415,900	13,966,800
1882	65,322,700	14,960,000

The exportation for the year 1883 was valued at $15,262,000. The number of sheep in the colony has increased to 15,500,000. The wool product of 1890 reached the amazing amount of 102,227,000 pounds. This clip sold for $28,037,000. The product from 1880 to 1889 was sold for $207,622,000. The value of the staple has increased $10,500,000 per year, more than the annual product of 10 years ago. The body of the wool goes to Europe, but the United States has been importing small cargoes to mix with its inferior wools. In 1887 it imported 237,000 pounds from New Zealand, and in 1888 increased its demand to 1,099,000 pounds. The New Zealand cross-bred wools now bring 29 cents per

pound. The enlarged demands and improved quality has increased the price of its wools three and four cents per pound.

The exportation of sheep has also grown. Many thousands are shipped as frozen meat, and large numbers are exported alive to improve the breed of flocks in other countries. The number of animals exported per year are now 2,000,000, valued at $5,055,000. In 1889 Cailfornia imported 38,000 head, to combine with American animals. The production of wool in New Zealand is profitable. The sheep are not only the largest and most beautiful animals and have the longest and finest wool I have ever seen, but they also make superior mutton. Their flesh has as much demand as their fleece. The prices of wool had a gradiation of rates through a series of years. The fine, unwashed, merino wool at Christ Church, in 1883, sold at 19 and 26 cents per pound, and cross-bred wools in the grease were held at 16 to 22 cents per pound. The Leicester clips ranged from 13 to 21 cents; the Romneys, 16 and 18 cents, and the Lincoln wools, 16 and 18 cents per pound. The fleeces range from 14 to 24 pounds of 12 months' growth from each animal. The increase in the price of wool and the rise of the New Zealand clips to 29 cents per pound has added to its profit and stimulated its production. But the colony is young, and yet holds large areas of public lands. The rearing of sheep has just reached its ebb tide; but every year fresh lands are opened, new runs established, and the multiplication of animals rapidly increasing. The extensive territory suited for the occupation of flocks is being taken up, and the full capacity of the colony for the production of fine wool will, in a few years, be developed, and the present annual clip of 102,000,000 pounds will be enlarged.

The Ahuacata Pear.

The Ahuacata pear (pronounced as though spelled ah-wah-kah-tah) is the most delightful of fruits to certain people. A tree of this variety is growing in Santa Barbara County, Cal., and is considered one of the finest of the species in California. It is 18 years old, and has been bearing fruit ever since it was eight years old. It is very prolific this year, and a large yield was gathered. The tree is a splendid evergreen, and it is a near rival in size and symmetry to the primeval oaks of our forests. It belongs to the laurel family, and its name is derived from Persea, the Egyptian tree, and "gratissma" (most grateful). The tree we speak of in California is protected by a natural windbreak. It is surrounded on all sides by a forest, and it is situated on an elevation where there is practically no frost.

Among the inhabitants of the West Indies and Mexico the fruit of this tree is held in high regard. Most generally it is eaten raw, with salt or bread, made with the usual accompaniments into a salad. There are numerous other ways of preparing the fruit for those who have very dainty palates, but the way above described is the most general manner in which it is prepared. Mantequilla silvestre (butter of the woods) is the name by which it is sometimes known in Mexico. The variety is supposed to have originated in the West Indies, and the English-speaking residents there call it "vegetable marrow." By some Americans it is called the "alligator pear," which is undoubtedly a corruption of the Mexican name. Sometimes the product of this variety is placed on the markets at San Francisco, where it is often sold as high as a dollar a pear. The purchasers who are most eager to secure the fruit are "old timers," who were initiated in the manner of preparing this most excellent fruit while residing in Mexico.

Grasshopper Destroyers.

From recent accounts we glean that there is a grasshopper plague in Nevada, and that everything green in that barren section of the country was disappearing. It is well to know that the grasshopper has several deadly enemies, and if a sufficient number of these were placed in the midst of the grasshoppers it would not be long before the numerical strength of the grasshopper army would be considerably diminished. In Nevada there is a species of reptile which is quite common, and which catches and eats a great many of the nimble insects. It is generally known as the fence lizard, and its work ought to be appreciated. Another great enemy of these insects is the skunk—that much-abused animal. But still his presence, we do not think, would be tolerated by a good many people, and beyond mentioning him as an enemy to the grasshopper we will pass on. The common toad is a voracious eater, and he regards the flesh of the grasshopper as being extremely palatable. The planters of California have learned the value of turkeys in the destruction of these insects, and for the purpose of keeping their vineyards and orchards free from their depredations they have a large flock of turkeys. The poults do a great amount of good, and as their reputation as foragers is so well established it is not worth the while to dwell of their merits in this brief space. The fowls catch so many insects that there is but very little cost in keeping them, and the only danger is that their liking for the grasshopper's flesh will cause them to gourge themselves, and in many cases death results from indigestion.

Shoestrings.

Probably not one man in 25 has an idea ot the vast bulk of shoestrings manufactured in this country, nor of the large fortunes that have been accumulated by the industry. One firm in Providence, who have been established since 1793, and will hold their centennial celebration at the same time that the World's Fair will be commemorating the sagacity and wisdom of Columbus, at Chicago, use 1,500po unds of lead every week for the metal tips of shoestrings alone. Their machinery and process of making shoestrings remains a secret after 100 years of operation.—*Boston Commercial Bulletin.*

CALIFORNIA IN 1848, '49.

The Condition of Things Just Before the Close of the Mexican War.

The war with Mexico had not ended when a line of steamships was established between New York and Oregon, *via* the Isthmus of Panama, touching at the principal way ports; nor had the discovery of rich placer gold deposits in the Sierra foothills been made when this line was established, nor was this discovery known when Mexico concluded the bargain of sale to the United States. The results of these momentous events were not greatly felt until 1849, when under their united influence sprang into existence a new order of humanity and new conditions of human affairs. Throughout the year 1848 gold was so easily gathered, and was so plentiful in the mines and at the trading-posts, as to be seemingly of little value. Miners left it in bags and open tin utensils in their cabins when they went out to work, and merchants would take it by the handful in exchange for their wares without the troble of weighing. In the office of Sutter's fort, and in the hall of the Commandant's house at Sonoma, stood bottles and pickle-jars full of the metal, the owners never giving a thought as to theft. The convicts from Sydney and the rascals from everywhere had not yet arrived; everybody knew everybody, and men were too honest to steal what they did not greatly covet. Besides, what right had anyone to suppose that this state of things would not last forever; that the lordly miner who opened his bag for the dramseller to take a pinch for his drink would soon want bread, or that the autocrat Vallego, who flung to the boy who held his horse a golden ounce, would have ere long scarcely a dollar he could call his own? Again, if mules could be loaded from these scatterings about the lower streams, might not ships be filled from the mountains of metal in the homes of gold away and above? In the minds of many the supply was inexhaustible, and it seemed folly to them not to buy all they desired before the purchasing power of the stuff should further diminish.

In 1849 the world at large, those who at first had paid but little attention to the earlier rumors of gold discoveries, awoke to a realization of the fact, and became wild in their hungry excitement. The strange features and phenomena attending the great rush, the overland journey, the voyage via Cape Horn and the Isthmus, belong as much to the history of this country as any narrative of political or industrial development. Five hundred ships at one time lay in the Bay of San Francisco, abandoned by officers and crews, who scarcely waited to anchor before being off for the diggings. Whatever was wanted brought fabulous prices, whereas goods not desired could not be sold at any price, no matter of what intrinsic value. One person was as good as another, and a little better.

"Here, you," said one accustomed to command in such emergencies, on stepping from the steamer, to a ragged fellow apparently hanging around for a job, "take this half-dollar and carry my valise to the hotel." "And here, you," returned the fellow, "take this dollar and carry it up yourself."

From every quarter came some of the best, and many of the worst, and a reign of rascality began, which, in the absence of civil government and a written code of laws, brought into being committees of vigilance, arbitrary proceedings, mobocracy, and popular tribunals. Also the cry was thus early raised that the mines were becoming exhausted, and it was time to return whence they came. None of these early adventurers thought of California as a home; it was no place to live in; they would gather a little gold and hasten away, and of the 50,000 who came fully one-half returned the same year, and most of the remainder would have gone away had they possessed the means. It was a community of men, many of them reckless, swearing, swaggering fellows of every nationality, from every clime, and of every shade of color and conscience, yet young, strong, hopeful, intelligent, energetic, many of them as honorable and high-minded as ever were born. It was good stuff to make a new nation of, or to renovate and revivify an old one. It was a homeless, churchless community, everything that was worn or eaten, even bread-making material, being brought from abroad. Agriculture, in a land parched and cracked through the long rainless Summer, was not to be thought of. As late as 1850 an astute representative, on the floor of the United States Senate, exclaimed, "Agriculture! I would not give six bits an acre for the best land in California for agricultural purposes."—*Lippincott's.*

Oil from Corn.

It will probably be a surprise to many to know that there is a company which purchases corn solely to extract the oil from it. This is precisely what a sugar-refining company in Chicago is doing. This company is the only one which has the secret of obtaining the oil, and employs it after the corn has been converted into a starch or glucose so that nothing will be wasted. The oil is a soft yellow liquid, and resembles linseed oil in appearance. Dr. Arno Behr discovered the process of separating the oil from the corn, and the doctor says this in regard to the oil: "It has been known for a long time that maize contained an oily property, remaining for someone to turn the idea to account. There is no danger of corn oil ever taking the place of linseed oil. In the first place, it will be too scarce. The amount of oil contained in corn is only four per cent. of its total weight, and we lose almost half of it in the process of abstraction, so that we get a very small amount of oil after all. The assertion has been made that corn oil can be put to little use—that it cannot be employed in making either soap or paint. The great value of linseed oil paints is that it dries readily, and it has been asserted that corn oil will not dry. Now, this is a mistake, and as a matter of fact, corn oil can be used in making paint or varnish, and also in soaps. It makes a splendid soft soap. That there are valuable uses to which it can be put is shown by the fact that there is a demand for it in foreign markets."

FARMER MEETINGS.

The Gunpowder and Deer Creek Clubs, of Maryland, Discuss the Yield of Crops.

THE August meeting was held at the farm of Samuel M. Price, the fertility, admirable condition, and thorough cultivation of which are known far and wide, its energetic and intelligent owner having brought it up from comparative exhaustion to be one of the most productive in the County. The farm contains about 180 acres, and is notable for its heavy crops, especially of corn, one field last season averaging over 14 barrels to the acre, and for the persistence and success with which weeds are fought and vanquished. The tour of inspection showed plowing was being done for wheat, the land having been previously covered with manure; the corn crop is promising, the sets of grass and clover all excellent. Mr. Price prizes orchard grass very highly, and uses it for permanent pasture, one field which was seeded to this variety 10 years ago being still in fine condition. The garden is luxuriant; the corn crib contained some 200 or 300 bushels of last year's corn, and all the buildings were in the best of order. The barn, which was built more than 80 years ago, is still substantial and sound, the original roof of cedar shingles protecting mows filled to bursting and promising to last through the century.

The stock was found in admirable shape, thrifty and well cared for, the fences in the best of order, and everything around betaking skill and good management.

Upon the reassembling of the club in the spacious dwelling, a report was submitted of its last meeting, which was held at Sparrow's Point, and a resolution was adopted approving the action of the Baltimore County Fair management in prohibiting games of chance and the sale of intoxicants on their grounds, and promising general attendance on the fair.

The "half hour for questions" coming up, the following were asked and answered:

Is not our Fultz wheat deteriorating, and is it not desirable to procure seed from other localities or to use other varieties?

Edward Austin preferred to do so, though it was said wheat brought from other localities did not prove any better.

Samuel M. Price valued the old Mediterranean red, and would be glad to have the same now. The bearded wheat does not have the same strength of straw as the Fultz, and an objection to the Clawson was the case with which it shattered.

Lewis M. Bacon said his Fultz this year averaged him 24½ bushels to the acre, and the quality is superior, and last year he got 26½ bushels of just as good. Some Longberry is mixed with it this year, but this is not a disadvantage, and he is disposed to sow his own seed, as the price received is as high as for any other.

John D. Matthews got some years ago from New York a wheat called the Genesee white, which gave 22½ bushels to the acre.

Reference was made by members to yields of white wheat in this community of 28 bushels to the acre, and that though the yield was good and the flour made from it handsome, yet the grain is not as salable as red wheat. In some seasons the Longberry yields better than the Fultz, but as a rule the latter succeeds better, and has the advantage of a stiffer straw.

Abram C. Scott praised the Buffalo red, which he has grown for years with success.

Samuel M. Price asked what he should do with a good crop of cow peas which he had grown, and the vines of which he did not wish to turn under. He finds they make admirable pasture, and that cows increase their flow of milk on them. He was advised to cut and cure the crop to feed to the cattle and sheep during Winter, or allow the seed to mature and save and market them.

L. M. Bacon asked for experience with fertilizers. The general opinion seemed to be that the different sorts gave practically the same results on grain and grass.

Edw. Austin considered the "Grange Agency" equal to any fertilizer for wheat, and will stick to it, sowing 250 pounds to the acre.

Abram C. Scott had excellent results from a mixture of dissolved bone and S. C. rock, in equal proportions, costing $22 per ton.

Written crop reports of 1891 being next in order, L. M. Bacon, reported 819 bushels of wheat on 31 acres, average, 26½ bushels. Corn average, 9 barrels; oats, 34½ bushels; hay, one ton to the acre. Twelve hogs averaged 265 pounds. His is a dairy farm, and his sales of milk and cream aggregated heavy amounts.

Samuel M. Price sowed 26 acres of wheat; average crop, 20 11-13 bushels; 32 acres corn gave 13 barrels (65 bushels to the acre); hay averaged one and one-third tons; rye, 18 bushels. Stock, pork, and wool, and the products of dairy and poultry yard added appreciably to the income from the farm.

John Bond got an average of 20 bushels of wheat to the acre; nine barrels (45 bushels) of corn; one and one-fifth tons of hay, and 22½ bushels of oats; sold 1,200 pounds of butter, many eggs, and butchered 13 hogs, weighing 2,899 pounds.

James B. Gusor got an average of 26½ bushels of wheat on one farm and 19 bushels on another; corn averaged 11 barrels (55 bushels); rye, 12 bushels; oats, 18, and hay, one and one-half tons to the acre. Potatoes yielded 75 bushels only to the acre, but husk, butter, stock, and 739 dozen eggs brought up the returns from the farm.

Comparing the verbal crop reports made last June with the written ones now presented it was found that good hits had generally been made. The widest divergence was by Samuel M. Price, his reported probable yield of not over nine barrels of corn giving in fact 13 barrels. Verbal crop reports for the present season were submitted.

E. Austin thought his wheat would average 20 bushels; corn, 10 barrels; oats, 40 bushels, and hay, one and one-half tons to the acre.

A. C. Scott judged his wheat would yield 20 bushels; rye, 12; barley, 45; oats, 30 to 35, and hay, one ton.

L. M. Bacon, fallow ground wheat having given 24½ bushels he thought corn ground will not average over seven; corn, 11 barrels; oats, 25 bushels, and hay, about one ton; potatoes, light.

J. B. Guser, wheat, 12 to 14 bushels; rye, 12; oats, 25; hay, one ton; potatoes, large vines, few tubers.

W. W. Matthews, wheat, 10 bushels, including corn ground; corn, a fair crop; hay, one and one-fourth to one and one-half tons; potatoes, poor.

N. R. Miles, wheat, 20 bushels; oats, 25; corn, 10 barrels; hay one, and one-half tons; potatoes, very good.

John Bond, wheat 20 bushels; oats, 25; corn 10 barrels, and hay, one ton.

S. M. Price, wheat, 18 and 20 bushels; corn ground, 8 bushels; corn, 10 barrels; hay, one and one-fourth ton, and oats, light.

The Deer Creek Farmers' Club, of Maryland, held its August meeting at the residence of John B. Wysong, and discussed this subject.

Mr. Wysong said the average farmer can hardly afford to handle thoroughbred or pure bred registered stock. The necessary outlay for procuring breeding animals is large, and much care and feed are required. Where a man can afford to go into raising and selling thoroughbred stock of any kind as a business it may pay, but he would advise farmers to get pure-bred males, select the best females available, and by breeding up they will secure stock better adapted to their purposes than costly thoroughbreds. Pure-bred sheep, however, are a stock not very costly, and any farmer can obtain them. Thought half or three-quarter bred Jerseys better than the pure, being less delicate.

Wm. D. Lee thought a farmer can better afford to raise thoroughbreds than common stock, but it doesn't pay to stunt stock of any kind. The "corncrib cross" is always good, but anyone who makes a specialty of any kind of thoroughbred stock, and handles it intelligently, can make a success of it.

Thomas Lochary said all kinds of stock, horses, cattle, sheep, and swine may be rapidly improved by the use of thoroughbred males, and this makes the farmer's opportunity.

R. Harris Archer agreed with the views of Mr. Wysong, and thought pure-bred sheep more profitable than common stock. At prevailing prices of thoroughbred Jerseys it doesn't pay any farmer to make a specialty of them, since a grade cow gives as much and as good milk as one full bred. Prefers grade hogs, they growing larger than pure bred in the same time.

Edward P. Moones said he would raise nothing but thoroughbred stock if his means allowed, for they look better and sell better; but for the average farmer, grades are to be preferred. It costs the ordinary farmer much more money and time than he can give to show off a thoroughbred horse properly.

James H. Quinby, jr., believed also that it will not pay the average farmer to engage in raising thoroughbred stock; but at the same time the better the blood the more profit there is in the stock. Farmers ought to improve the quality of their stock as rapidly as possible by the careful choice of breeding animals.

Experience has shown him that grade Berkshires and Chester hogs are more "growthy" than any others. He had one hog of this cross which at 12 months weighed 400 pounds when dressed. Grade cows in his herd gave twice as much milk as full-bred Jerseys, though it is not so rich. The average test of milk is from 14 to 16 per cent. of cream, but three of his Jerseys show 25 per cent. It is almost a necessity to have some thoroughbred Jerseys in a herd to keep up the average of cream.

John Moores said the club seemed unanimous that it is important to breed to thoroughbred males, but farmers fear the expense of buying thoroughbred females. It costs no more to raise a thoroughbred than a half-breed, and by judicious crossing a farmer may secure stock which is practically thoroughbred and adapted to all his purposes, though perhaps not eligible to registry. He owned the first pure-bred Jersey bull brought into Harford County, and for 40 years he has never been without full-bred Jerseys, though he has never had one registered. Full-bred Jersey cows sell for from $15 to $20 more than ordinary stock. He advised farmers to buy pure-bred males and get into pure stock as soon as possible. Prefers thoroughbred horses even for the plow, provided you can get the size, and you can get it by feeding.

John W. Hanna advised the use of grade stock, improving it by using thoroughbred males, rather than to commence with thoroughbreds, which will do for stock farmers, but are too costly for the general farmer. If farmers own well-bred mares they should breed them to standard horses. Thoroughbred horses, if handled quietly, will work as well as any others. A small well-bred horse will pull as much as a large horse of common stock. For any farm work a horse of 1,100 to 1,200 pounds is heavy enough. The same thing applies with cattle and hogs, and he prefers pure-bred Berkshires to any cross.

James F. Kenly thought every farmer should improve his stock of all kinds

from horses to chickens. Good males are so abundant that their services may be obtained at a moderate price, and there is no excuse for breeding to common stock. Of course, judgment must be used in selecting breeding animals, and those of good size chosen. Many well-bred horses are too small for breeding purposes for the farmers use. There is no profit in the farmers attempting to raise trotting horses at the expense of size. Should a colt happen to develop great speed so much the better, but if of good size without speed he is worth something for other uses than the track.

Bennett H. Barnes said the value of a horse at the present day is largely dependent on his pedigree, so it is good policy to breed only to pedigreed animals, taking into consideration at the same time size, general style, action, etc. It is not best to put hot-blooded mares to racing horses to obtain horses for general utility, but cold-blooded mares should be bred to thoroughbreds provided good size can be had, as is always an object.

D. C. W. Smith said the discussion was to find out what is best for the farmer. Though the prices of pure-bred and registered cows, hogs, and sheep have declined, the same cannot be said of horses. Especially is this true since the former trotting records have been reduced. A farmer must first consult his purse, however, in buying breeding animals, and get them as near pure as he can; and in breeding he must not consider pedigree only, but the form, size, and symmetry of the animal. A handsomely-formed animal, whether horse, cow, or sheep, is not only attractive to owner and buyer, but is more salable. A man might begin in a small way with thoroughbred stock and make a success of it if he has taste and skill in that line. Farmers must be guided, however, by the circumstances around them. Raising horses for speed doesn't pay, but if they are symmetrical and stylish, they will sell for a good price even if not speedy.

A PRIZE ESSAY.

A Scotchman on the Subject of How Plowmen Can Better their Condition in the Land of Robert Burns.

The subject of farming is receiving a good deal of notice in Scotch papers. Hard times seem to prevail, and remedies have been suggested and tried with no avail. The *Dundee Weekly News* offered a prize for the best essay on "How Plowmen Can Better Their Condition," and the following was the one which won:

You do well in asking those who till the soil to state their own case. Both political parties have of late been angling for the plowmen's vote. Small holdings and allotments have been given as a kind of bait to the rural voter, with the promise of other good things to come. These measures are no doubt in the right direction. Small holdings could be profitably cultivated when in a neighborhood of a town or large village where there is a ready market to relieve the hand of the producer.

A croft of 20 or 30 acres would make a very comfortable home for one who has been trained to the soil, and who has been careful in making the most of his savings for a few years; but then the plowmen who seeks to make his living on the allotment or croft improves his position by becoming his own master, and consequently he ceases to be classed as a plowman. The attempt to cultivate a very small croft while in the constant employment of a master may sometimes meet with success, but the servant who places himself in such a position is often looked upon by the farmer as a kind of serf. He is no longer a free agent in the management of his affairs. Being bound to the croft, he is dependent on his master for its cultivation in proper season.

What plowmen really need to improve their position as plowmen may be summed up in the word comfort. Wages have nearly doubled during the past decade, yet we find the farm hands housed and fed pretty much if they were 60 yeas ago. The modern farmer no longer dines with his servants at the head of the table. He and his family receive the full advantage of the advancement in social life, while the servant suffers all the drudgery of the past generation.

The bothy system must go. It is an abomination unfit even for the backwoods of America, and the condition of the farm hands is little better where men and boys are fed in the kitchen, and set to roost like fowls over the stalls of the horses in a loft, where there is neither a fireplace nor a table; where there is scarcely any light during the day, and only the light of the stable lamp at night. How could farm servants improve themselves in such lodgings, where they only get

> The struggling sunbeam's misty light
> Or the lantern dimly burning?

Comfort is altogether foreign to the plowmen's social condition. Tired and wet from the fields he retires to his bed chamber, unless he cares to try the dangerous experiment of drying his wet clothes on his back at the kitchen fire after supper. Otherwise he is frequently compelled to dress himself in his wet clothes next morning in the same condition as he put them off. Married plowmen fare no better as a rule.

Houses are not to be had in the vicinity of the farms, and they seldom see their homes oftener than once a week. Young men have thus no inducement to marry when they find that additional cares bring no corresponding comforts. Good, healthy houses for farm hands are urgently needed in nearly all our rural districts. Suitable houses with two flats, containing three or four small apartments in each flat, could be built for £350 to £400.

A large garden, in addition to the house, would prove of great advantage to the tenant, who would thus be enabled to grow his own potatoes and vegetables. A few fowls or a pig might also be reared to advantage. Such a scheme would certainly involve some difficulties and changes at first.

The plowmen would require to get their wages weekly or monthly, also the equivalent of their board, either in cash or otherwise as might be arranged, so that they could live entirely at their own homes, as is done in the rural districts of England. The unmarried hands could board in the houses of the married men, where they would be under the softening influences of home life. If they chose to remain on the farm they could demand better food and more comfortable quarters.

A country tradesman usually boards his hands, and they are treated to some of the family comforts. There is no real excuse for not treating plowmen in the same way. It is no use for ministers of religion and others to go about the country crying down farm servants on account of their shortcomings. Give them home comforts, and improve their social condition, which will have tenfold more effect than all the sermons and lectures which have been delivered on their behalf.

The difficulty in the carrying out of this scheme is the building of suitable houses. The rent would require to be moderate, and the houses must be built to meet all the demands of modern sanitary requirements. Some one must become responsible for the building and upkeep of such houses, and the better plan would be for district or parish Councils to have powers to recommend the building of cottages where required.

It would be better for the plowman to have the proprietor of the land for a landlord, otherwise he would be under the heel of the farmer, which in many cases would result in hardships where the tenant was not a free agent. Government would require to lend money at a low rate of interest to landlords when the buildings were recommended by the district Councils. Two and a half per cent. would be sufficient interest, allowing the landlord to charge three per cent. to cover depreciation and the cost of repairs. The yearly rental of a house for two families would thus amount to about £12.

A large garden could be rented for 15 or 20 shillings by each tenant, which would bring his yearly rental up to £7. This may seem a large sum, but we have to keep in view the advantages to be obtained from growing potatoes and vegetables, and rearing a pig or a few fowls, which would reduce the rental one-half, as compared with laborers' houses in cities, where £7 and £8 are paid for two small rooms, besides the taxes in a country district would be almost *nil*.

In most cases a small sum could be earned by boarding the unmarried hands on the neighboring farms. When some such scheme has been carried out we will hear less of the outcry about the decrease of the rural population. Weekly payments, comfortable houses, and gardens are the most pressing needs of plowmen to improve their social condition. Half-holidays and shorter hours will follow, but comfort first and pleasure afterward.

Fishing in the Northwest.

Whoever passes along the main retail street of Seattle and happens to notice the counters in the principal fish store will be astonished. In the chromatic display of the captive creatures of the sea is the text for another chapter on future wealth for Washington. They have the salmon, though that catch is credited to Oregon and Alaska. There are in the northern waters cod banks thousands of miles in length; halibut, codfish, rock-cod, sole, sea-bass, smelts, shrimps, herrings, and oysters are all abundant. Apparently the fisheries outweigh those of the East as the timber belt excels that which once inclosed the Great Lakes. Candor compels me to say that the Pacific fish, with one exception, are inferior to the same kinds of fish in the East, yet they are not wanting in fine qualities. The halibut of Washington and the North is, I believe, the finest sea fish for the table that is known in America. The tiny muddy oysters, the size of a dime or quarter, are the meanest product of that sea, but they find a ready sale and are admired. Since that is so, hope for all the rest should be rampant. Their crabs, on the contrary, are not mere samples; they are wholesale products, regular marine monsters; and all the better for that, since they make good food. The fishing that must in a few years fleck the waters of the Pacific with sails is scarcely begun. There is only a million invested in it, and only a million a year is produced by it.—*Harper's Magazine.*

Basket Makers.

The coming crop of fruit is causing a good deal of bustle and work among the basket makers. The skill in which they make the baskets is simply wonderful. Energy, precision, and speed are the principal requirements, and a skillful girl can make from 600 to 800 grape baskets a day, and from 900 to 1,500 small berry baskets in the same period. The champion record is held by a young lady of Frankfort, Del., who has a record of making 1,700 baskets in a single day. The price paid for the manufacture of these baskets is very small, and the wages received are nine cents per hundred for the small berry baskets, and 15 cents per hundred for the grape baskets. It will be seen that it would take them a long time to get rich off this rate of wages. The baskets are piled up in a large room when completed, and undergo a drying process, and when they emerge from this room they are as clean as a newly-laundried shirt. They are packed in crates of 1,000 each, and shipped to the jobbers of the large berry growers.

There is a peculiar tree known as the "life tree," which is found in Jamaica. The peculiar fact of the tree is that its leaves will grow after they have been severed from the plant.

Only 611 planters, as against 701 last year, have applied in Louisiana for the sugar bounty. Consolidation of plantations is the cause of the decrease.

THE BEST LAID PLANS.

A Lover's Quarrel Terminates in Bliss and Happiness.

BY ADELE M. GARRIGUES.

"The moon shines bright—in such a night as this,
When the sweet wind did gently kiss the trees,
And they did make no noise, in such a night,
Troilus, methinks, mounted the Trojan walls,
And sigh'd his soul toward the Grecian tents,
Where Cressida lay that night."

IT PLEASED a young girl's fancy to repeat this pretty sentiment as she leaned over the rail of the Midget on the first evening of her first experience on a yacht.

The halcyon days of which youth must always dream were certainly at hand. There was not on the broad bosom of the Atlantic a merrier or more congenial company, at least to all appearances, than was the one of which she was a member. A family party, Mr. and Mrs. Burns, with their son and daughter, Alice Mershon and Mert Johnson, school friends, respective, of each, and Gertrude Corothers and Karl Rollo. However, we are told that there are spots on the sun's surface.

And Gertrude was not entirely happy. She had come on board with a strong determination to be happy, and was carrying out her resolution as well as a girl can hope to do who has quarrelled with her lover and is trying with all her will to school herself to accept the attentions of a man whom not only the world, but her own judgment, assures her has many advantages over the one whom she has dismissed.

The yacht was a small one, but complete in its appointments to a degree undreamed of in her philosophy. Indeed, had she rubbed the magic lamp, and had, in answer to her call, each request been granted, she would probably have omitted a thousand pretty things that now ministered to her comfort or charmed the eye with its beauty. Mr. Burns had stipulated for an "off-shore" cruise, but was prevailed on to leave his company for one week at Newport while he entertained a few bachelor friends with a short run. This week, filled as it was to the brim with pleasures that were new to her on this lavish scale, formed a picture to which Gertrude looked back in later years with a strange mixture of sentiments.

She had, as has been stated, resolved to be happy; having burned her bridges, a good generalship said go on, and she wanted to go on bravely. She had resolved to marry Karl Rollo if he asked her to do so, and she thought he would; but in the meantime she resented, to the depths of her girlish soul, the very quiet, gentlemanly assurance with which he pleased himself. She was capricious and almost unamiable. Alone in her pretty stateroom she would hold long colloquies with herself. "He takes it for granted that I will accept him because I have come on this cruise."

"Well," said the other self, "would you have come if you had not intended to do so?"

"But he has such a quiet, confident air."

"How would you have him appear? Has he not been scrupulously dignified and altogether correct?" and then when unable to find good reason for her dissatisfaction, she would compel herself to show more justice in her manner.

Mr. Rollo was no more moved than one of the rocky cliffs which they were passing. He was always serene, polite, kind; that is, Gertrude would have thought him kind could she have banished the thought that he was having just a little quiet amusement at her expense. She had learned while yet at "The Oaks," when she had first met him, that her raptures, ideals, and enthusiasms were fruitful only in a very good-natured ridicule. And now she felt she was always thinking and feeling in figures, as if she was a playful fish that a certain angler felt quietly sure of landing. Could anything be more humiliating? How did women manage these things? What ought she to do? And then certain tender memories would arise, memories of a love too great for questioning, a tenderness too deep and true for fears. Ah, what a world was this.

While at Newport it had been delightful to have such chaperonage and such knightly deference as she had received from Mrs. Burns and Mr. Rollo, but on the yacht she found herself cultivating the boys, Ned and Mert, with an assiduity that was more than pleasing. The boys voted her a girl with any amount of fun in her, and not a bit silly.

It was their last night out. The moon would be late, but it was agreed that there would be a certain lack of respect in failing to await on deck the appearance of her tardy and possibly waning radiance. To make this last evening memorable, or entitled to respect among its predecessors, each member of the party was expected to excel all previous efforts in the way of entertainment; and so the girls sang their finest songs, the boys told their wildest stories of college pranks, and there was no inconvenient questions as to dates or probabilities. Room for romance was freely accorded.

Mr. and Mrs. Burns were beguiled into furnishing jointly an unpublished chapter from the history of their own courtship. This portion of the evening's amusement was made irresistibly funny by being promptly dramatized by two of the young people. Mr. Rollo told a very highly-colored story of an adventure which he located at Heidelburg and attributed to his foreign student life. Gertrude would not tell a story, but proposed a game.

"Truth," said Ned. "There is any amount of fun in that."

"I consider that remark a reflection on our stories," said Mr. Rollo, in an injured manner.

Ned's suggestion prevailed, and as the forfeit, due at certain stages of the game, the unlucky one was compelled, "pon honor," to reply truthfully to a question from each member of the company.

"Ned," said Mrs. Burns, with judicial severity, as her turn came to quiz him, "what became of the pies that were to have been our dessert to-day?"

Ned groaned with undisguised anguish. "The truth," said Mrs. Burns sternly. "The whole truth," echoed the expectant company.

Ned buried his face in his handkerchief, but finally faltered out. "I cannot tell a lie, I couldn't find them. Ask Mert."

Among the questions to which Gertrude was called to reply, was one asking her to describe and give certain characteristics of her ideal hero as portrayed in fiction. She replied very promptly. "He is roughly dressed, and having just been shipwrecked on an unknown island, he has no earthly possessions except a dog, a watch, four friends, and exceptional common sense."

"Why is he your hero?" asked Alice Mershon.

"Because he is independent of circumstances."

"Explain," said Merton Johnson, with impressive brevity.

"With his fertile brain and remarkable executive force he was able within the limits of a few months, I don't remember just how many, to evolve many of the arts (he has the sciences) from chaos. He made the wilderness to blossom as the rose, brought the earth, the sea, and the air to pay tribute to his genius; in short, as I have said, he accomplished in a year what it has taken the race ages to achieve."

"Do you believe in him?" Mr. Rollo asked. He evidently considered her characterization a mild satire on what she had termed his masterly inactivity.

"I would if I could meet him," she answered.

"Is he always in full dress?" asked one of the girls.

"Always," said Gertrude.

It was Ned's turn. Brushing his stubby hair into as startling disarray as circumstances admitted, he assumed a tragic attitude, and in a falsetto, which wickedly caricatured poor Elsa, he demanded:

"His race, his name?"

"Cyrus Smith," said Gertrude, calmly.

"There, triumphantly, I knew she had been reading Jules Verne."

AS SHE LEANED OVER THE RAIL OF THE MIDGET.

"See, see," said Alice, "look there." All followed her gaze to the distant horizon. The moon had arisen and a track of silver splendor already lay across the sea, bringing her greeting to their very feet.

"Hail to the queen of the silent night," softly sang the girls, and masculine voices took up the refrain softly, and sang with them:

"Fairy moonlight, fairy moonlight,
Stars wink and sing,
Heaven's arches ring,
Hail to the queen of the silent night,"

There was no more merriment. A quieter feeling had arisen with the moon; its effects upon the various members of the company differed; Ned and Alice, Mert and Marion were promenading the little deck singing in low tones all the songs they knew that were appropriate to the occasion. Mr. Burns was already asleep, a fact attested by both sight and sound. Mrs. Burns, in a comfortable chair near him, had drawn her wraps around her and was trying to sleep.

Mr. Rollo and Gertrude had found a comfortable seat behind the pilot-house.

"I suppose when we awake to-morrow morning we shall be at the wharf," he said.

"Yes."

"You've not been very happy on this trip, Gertrude?"

"I, not happy?" she said. "It has been the dream of my life to have just such a trip as this."

"And yet you have not been happy," he persisted. "I wonder why you are unhappy. Is there any good reason, Gertrude?"

During the silence that followed Gertrude choked back the rising tears and recalled the resolution with which many times during the last few days she had fortified herself. Again she said to herself, as she had said many times: "It is all over, I shall never see Nat again. If Mr. Rollo asks me to marry him I will do so. I will marry him and make him happy, and will be happy myself." True, the latter part of her resolution had generally ended in an unpromising sigh, but she recalled all this as Mr. Rollo sat there before her, now quietly waiting to hear, if she would tell him, why she was not happy.

"No," she said, in quite a decided tone, "there is really no good reason."

Mr. Rollo laughed and said: "Well, that is settled then. Now, one more question," and he took her hand as he said, "tell me, Gertrude, before I ask you

to let me try to make you happy, is there any reason, any other attachment, anything that would make my visits unwelcome?"

Mrs. Burns called up that she was going down stairs. "Good night," she said. Mert and Alice were walking toward them.

Gertrude withdrew her hand, saying, "Visit us certainly. Mamma will always be glad to see you."

Mr. Rollo did not, however, call immediately. A note from him informed Gertrude that he had been suddenly called away on business of the utmost importance. He expected to return within a few days, and was allowing himself to hope for a kind reception at her hands. The relief which the respite seemed to be to the girl was not the best warrant for future happiness. Still her mother, who was not without a certain interest in the issue, comforted herself by prophesying that when once settled Gertrude would see that she had been wisely "led."

About two weeks after the return from the yachting excursion Gertrude dressed herself in her finest array to attend the wedding of an uptown friend. She was to act as bridesmaid on the occasion, and the brother of the bride, a pleasant young fellow still in his teens, was to call for her. She thought she heard a carriage stop at the door; she was sure she heard the bell ring, and, ignoring the card that the servant presented, she ran lightly down the stairs and stopped suddenly on the threshold to see not Arthur Dunkirk, as she had expected, but Nat Streeter.

She was too much shocked to find any words. Nat had sent up his card and then taken a seat, as he had often done previously, where a convenient mirror would show him the familiar figure descending the stairs. He hardly thought Gertrude would see him at all, but if she would, he was bound to place the package of letters for which she had asked in her own hands.

When he saw a radiant figure all in glistening white come down the steps he started as if he had seen a vision. A moment later and Gertrude stood in the doorway; the light-hearted gayety he had seen on her face but a moment since changed to a pallor that was alarming. He went toward her, but no words were ready at his command. A third party would have thought them each awaiting some explanation from the other.

"Gertrude, I have brought your letters." He had spoken. Would he go on? she thought. Would he upbraid her or say something that would invite a sharp reply? She thought that angry words might loosen that tightening band about her throat. And her heart—could he see how it was beating against its walls? Had she drilled this unruly member to so little purpose?

"You wanted to see me?" she said at last, feeling that the silence was unendurable.

"Yes, I wanted to see you," he answered. "I don't think that very unreasonable, do you?"

He stood in precisely the same place in which he stood when he had last been in that room. He looked down upon her as he had looked when he had taken her two hands and placed them on his shoulders.

"I have not changed, Gertrude. I am the same man that I was when you sent me away; only less happy than I was then."

A stone image could not have been more silent than was Gertrude.

"I hear that you are to marry Mr. Rollo. Don't expect me"—his voice was gathering some force and a ring of scorn. "Don't expect me to offer congratulations just yet."

"You are generous," she said, and she made an effort to freight each syllable with indignation.

"I can't offer congratulations yet," he said, ignoring her words, "but I did want to see you; I can't understand it at all. I've got to accept the fact that you are changed, and I want to see how and what manner of woman you had become in these few months."

He was looking searchingly in her face. A ray of light from the upper portion of the window fell upon her. She was white, and shivered as if with cold. She drew the thick wrap closer about her and turned toward the door.

"No, don't go just yet. I shall never trouble you again. Here are your letters," and he held them toward her, and then withdrew them suddenly and placing them on a table took her hand. "Gertrude, are you happy?" he asked.

"If I am it is because you have lost your power to make me wretched." All the little satisfaction she could find was in this feeble effort to be indignant.

"You don't look happy, but if you say you are, I must take that as an answer. I shan't ask you any more questions. You will say good-by to me, I hope."

She gave him her hand and he held it a moment between both of his own, gently stroking it as if to give it warmth. Gertrude tried to disengage it without seeming abrupt. She felt that if she could hold out a few moments longer she should see the end of this scene without sacrificing her dignified reserve.

"It was prosperity we could not stand," he said, keeping his grasp on her hand and drawing her toward him, "was it not? I think we could have met misfortune together bravely."

She would have spoken now. She would have said that the petty bequest from her aunt had nothing to do with her feelings, but she could not. Icy fingers seemed to have taken control of all her articulatory organs. She wanted to send him away. Nothing but the wildest weeping could result from this restraint, and she felt that control was becoming more difficult with every word that was uttered.

"Not one word? It is'nt likely we shall meet again. Well, good-by. I will try to wish you happy, but I don't believe you will be." Mr. Dunkirk was shown in just then, and with formal adieux Nat was gone.

Mr. Rollo called on the evening of the same day. Gertrude wanted to be excused, but a few sharp words from her mother roused her, and she went down to meet her caller with quite a new expression on her usually calm face. Had her mother understood her mood she might possibly have questioned the success of her generalship.

There was another caller in the parlor when she entered, and it was some time before they were alone. But at last the decisive moment arrived—the moment Gertrude had dwelt upon as the one that should change the direction of her life and convert her from a poor young woman whose mother kept a boarding-house for a living to an indescribably happy girl who was no longer the victim of vulgar circumstances.

Mr. Rollo drew his chair nearer to hers and endeavored to take her hand. Ignoring its quiet withdrawal he said, "I've had this evening in mind during all these tedious days. It seems an age since we were together on board the Midget."

"Yes, it seems a long time to me," Gertrude replied.

"I hope we shall not be separated for any length of time in the future," Mr. Rollo said, and then, not fully understanding a new expression in her quiet face, he added: "Gertrude, will you be my wife? Will you let me put this ring on your hand?"

"No, Mr. Rollo, I cannot. It is all a mistake. I have been very much to blame. I want you to forgive me." And she struggled rather ineffectually with an excitement that choked her utterance, and Mr. Rollo said:

"What is the trouble? What have I done? You were kind to me that last evening; you allowed me to hope that"——

"Yes, I did," she interrupted. "I am much, I am wholly, to blame. I'll try to tell you. Before I came to visit Mrs. Burns at 'The Oaks' I was engaged to Nat Streeter. I thought you might have heard about it. I quarrelled with him. It was all my fault. He was not at all to blame. Mamma did not want me to marry him. She thought he would always be poor and that his life would be hard. Mrs. Burns invited me to 'The Oaks,' and you know the rest, only this: I shall never love anyone but Nat. How can I? I tried"—she struggled with her words at this point—"I tried to like you, I do like you; but, no, it's no use." And something like a sob escaped her.

"Tell me about Nat," said Mr. Rollo. Her frankness was arousing a new interest. "Is he so superior that I have no chance?"

"No, not superior at all, but I love him."

"And you don't love me?"

Gertrude looked up. There was the old, quiet smile on his face. She gathered courage and said:

"Not a bit; but I like you heartily, and if you can forgive my foolishness I hope we can be friends. Mr. Rollo, do you know how many influences there are around girls to lead them to think that they are doing right in smothering their feelings and marrying for other reasons than love?"

"I suppose that is so; but a man takes a great risk, as well as the woman, when he marries a woman who doesn't love him, and for marrying one who loves another. Well, Gertrude, I'm disappointed, that's certain, but I am glad you've been frank." He rose to go. As he took her hand, he said:

"May I give you some advice?"

"Certainly, you may."

"Don't let any little feeling of pride stand between you and Nat. If, as you say, you were to blame, you know he can't come back unless you call him. Good-by."

Too days later Nat Streeter received a bulky letter, damp with penitential tears and warm with affection. It was from Gertrude. On the evening of the same day he again stood in her mother's parlor and awaited the appearance of the "vision" on the staircase.

"And you are sure you love me well enough to choose between a modest apartment and marble halls?" he asked half an hour later.

"Pefectly sure now," she said archly. "But you are so superior to circumstances, that I expect you to manage them so that we shall have marble halls in time."

"Do you think our affection can survive that experience, too?"

"I hope so," she answered.

Agriculture in Russia.

The predominating trait of rulers from Cesar downward is an invincible hypocrisy. People of education and experience are invited to occupy themselves with agriculture, but they are well aware that no sooner have they arrived and settled down that they will be unmercifully expelled again. The Jews are blamed for avoiding agriculture, and are accused of not wishing to live by the sweat of their brow; yet they are forbidden to colonize without the pale or to own property. The Jew might round on his persecutors and say to them: "You condemn me for not taking kindly to farming, while you yourselves, Pharisees that you are, have reduced your farms to the last stage of impoverishment. God be praised, we Jews have had no part in it; but to envy you or to wish to be in your position is more than can be expected of us."

All this talk of agriculture is mere clumsy hypocrisy. The peasants fly from the land, happy, indeed, to find some other occupation. Others are not permitted to take their place; those who have the right are too ignorant to do anything, and the result is—chaos.—*The Contemporary Review.*

After considerable study a Connecticut scientist calculates that there are 43,560,000 mosketo larvæ to an acre of swamp land.

THE AMERICAN FARMER.

"*O fortunatos nimium sua si bona norint agricolas.*"—VIRG.

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USE FOR THE CONVICTS.

One of the strangest things is that with all the demand for good roads, and all the cry there is against bringing prison labor into competition with honest industry, there has not risen a great public demand for the employment of the penitentiary inmates in the improvement of the public highways. Even in New York, when there was a stoppage of all manner of manufacturing in the State prisons, and the officials had to resort to organizing the convicts into military companies, and drilling them industriously with wooden guns to keep them healthy, there was not a suggestion that the wasted physical energy of these thousands of strong men should be devoted to making better the atrocious roads that curse New York, as they do every other State.

This is doubly strange when we remember that ever since the beginning of organized society offenders against law have been made to pay part of the debt they owed to the community by labor upon the highways. Rome used her convicts to build her magnificent system of roads, which have been the admiration of the world for centuries. Perhaps the finest roads to-day in the whole world are those in the Bermudas. These are almost wholly, if not quite, the product of penal labor. While the islands were a convict settlement occupation had to be found for the prisoners, and magnificent roads were built in every possible direction, and made as perfect as human effort could accomplish. No pains were spared to make every grade as easy and every fill as solid as possible, and to thoroughly drain, bank, and bridge. There was no reason for sparing labor. It was there in abundance, running to waste, and the convicts were better off in every way by being kept constantly at work.

A system could be devised by which the entire mass of convicts in every State could be put to work improving the roads, and thus add vastly more to the wealth of the country than they can do as employed at present. They would thus be taken out of competition with honest labor in the various processes of manufacturing; it would break up the corrupt rings of jobbing contractors and unscrupulous politicians, which are the bane of State politics, particularly in the South. It would purify enormously the stinking, political pools which now exist in Georgia, Arkansas, Alabama, and Tennessee, where the treatment of convicts is a disgrace to civilization, and the gains from the labor belonging to the States demoralizes public men of all degrees.

The main objection to this sort of employment for the convicts will come from the puling humanitarians, whose interest in men becomes greater the worse they are. They will complain that hard work out of doors on the roads will interfere with their plans for the moral and physical improvement of the prisoners; that their baths, their isolation, their enforced good conduct, their regular attendance at prayers cannot be carried out so successfully as when the prisoners are kept within the walls of model prisons. They will also assert that the keepers and guards will be more brutal; men will be shot down in trying to escape. Also, that the spectacle of men in striped clothes working on the roads will be demoralizing to the community.

While there is some force in these objections, there is not nearly so much as the objectors would make them have. There is no reason why the convict laborers on roads should be any worse off for physical comforts than the men on a railroad construction train, and no reason why they should be made any more comfortable. It is likely that men will be shot down while trying to escape, but this is a necessary incident of any imprisonment, and the community is much better off by reason of the death of those so slain. As to the demoralizing effect upon the community of men working in striped clothes, will that not be counterbalanced by the effect upon prospective evil-doers of the stern, hard punishment of malefactors?

Make the convicts make good roads.

PROBABLY one-half of the $20,000,000 a year which the Government spends on rivers and harbors goes into unnecessary roadsteads and streams, the main use of which is to float saw logs down during a freshet. If this amount could be devoted to improving the common roads of the country, the good effect would be felt in every township.

OPPOSITION TO CHANGES.

Not one sheep raiser in 10 has a new idea on keeping sheep. They cling to the past, like they do to the religious and political dogmas of their ancestors. The demands of the mutton and wool markets may change, but the systems and methods of keeping sheep remain. When the prices are good they make money; when prices are bad they complain. A few years ago all were discouraged and blue. There were some sheepmen who could not wait for good times to come around. So they looked into the situation in a common-sense way and brought things around to their advantage. The results were new lines were discovered as possible, and a new prosperity began when no one expected it.

It is hard to get people to use new principles; but it is a hundred times harder to get them to quit old ways that have come down to them by inheritance. It is strange that any American should allow prejudices to stand in the way of progress; but it is the case especially in agricultural matters. The same crops are raised, the same old plows and harrows are used, the same sort of horses, cattle, hogs, and sheep are used that were raised two and three hundred years ago. This is perhaps well, since if it were found out that such products as they now grow were produced at a loss they would quit farming altogether.

This is one reason why so many quit the farm; this is why so many abandoned farms are found in the East and South. The old crops and methods are found to be unprofitable, and they have not the intelligence to find new means. If they do, the old fogy element laughs them out of it; so they get up and get out of the country. They go West, where the spirit of progress prevails, and is respected.

People in this country fret and worry about everything. Is it an American characteristic? A prominent business man said he had fretted a good deal, but had quit it, as it did not pay. That now he settled things as he went along. If he made a mistake, it was a mistake, and he tried not to do it over again. That is a sensible way. If less fretting was done and more independent thinking practiced, the sheep business would progress more.

THE AMERICAN FARMER does not advocate change for the sake of change, unless there is a wise motive in it. It is an old saying, perhaps an axiom, that "wise men change, but fools never do."

Ask all your neighbors to subscribe for THE AMERICAN FARMER.

PENSIONS FOR OLD AGE.

The subject of pensions for old age is being vigorously agitated in Europe, and in Germany the matter has reached the stage of legal enactment. A law was passed last year providing that all wage-earners receiving less than $500 a year must pay a certain small sum each year into the insurance fund. Upon reaching the age of 70, and being able to show that they have paid the insurance fees regularly for 30 years, they will be entitled to a pension of $50 a year. But if, after paying insurance dues for 25 years a man goes into business for himself, he forfeits all claim to an old-age pension. The plan is not popular in Germany, either with employers or employed, and the probability is that if another vote were taken it would be repealed.

The scheme that is being discussed in England differs from the German plan in the first instance in being voluntary instead of compulsory. It proposes that any workingman who pays $25 into the treasury before he is 25 years old shall have $75 added to it by the State. The interest that will accumulate on this sum will make a fund from which the treasury will pay the depositor $1.25 a week after he reaches the age of 65. If he deposits $50, the treasury will add $150, and pay him $2.50 after 65. This scheme is being sharply opposed by the workingmen themselves, particularly by those enrolled in such great beneficiary societies as the Foresters, who claim that the Government shall keep its hands off the matter, and allow the people to manage their provisions for old age themselves.

THE idea of a bullfrog farm may seem queer to a good many people, yet such a farm is running near Green Lane, Pa., by two men, and they make quite a good profit from it. The owners only sell the legs of the frogs, and get 10 cents per pair for them. The demand for the frog's legs is quite brisk, and the average number of pairs of legs sold per week is about 1,500. The farm in question is comprised of a 20-acre lot, inclosed with a high and tight board fence. The land was formerly a big swamp, and all attempts to drain it proved unavailing. As a frog farm it pays very well; in fact, better than anything else on the farm. One of the owners of the frog farm has been an enthusiastic hunter and fisher ever since his boyhood, and after having made a careful study of the habits of the frog he conceived the idea of raising them for profit. When he and his partner embarked in the business they were subject to the ridicule of the whole community, but since the business has commenced to pay they have turned the tables and have the joke on their tormentors.

A GREAT IRRIGATION SCHEME.

A number of capitalists of Cincinnati, Philadelphia, and New York are pushing an irrigation scheme, the results of which, it is said, will be the greatest North America has ever seen. It is exclusively a private enterprise, conducted by a stock company that has no bonds to float, no stock to sell, no mortgages to negotiate.

At present it is only a land syndicate, but it may develop into the giant sugar monopoly of the world. The company has had an existence for months, and through its agents has secured at a few cents an acre a tract of land on the St. Johns and Indian Rivers 83 miles long and from three to six miles wide. The land has three feet of rich muck, and, it is estimated, will be worth $100 an acre when drained. Surveyors have been at work some time preparing plans, it being the intention to drain the land in sections, so that a part may be available next Spring. The entire cost of the improvement is estimated at $4,009,000, and two years will be necessary to complete the entire work.

As fast as prepared the land will be planted in sugarcane. It is believed that on this reclaimed swamp enough sugarcane can be raised to supply the whole of North America. Truck farming will be followed to some extent, and on the higher knolls small fruits will be cultivated.

A WRITER in the *American Wool Reporter* says: "Farmers may talk tariff until doomsday, but until they discard the slovenly and dishonest manner of putting up their wool, as has been the custom for the past six or eight years, they must expect to sell their wool cheap. I bought 10,000 pounds of Australian unwashed at 42½ cents, and 10,000 pounds of Ohio washed for 36½ cents per pound. See the difference: 42½ cents for unwashed as against 36½ for our washed. Why is it so? Simply because of the condition of the wool, and nothing else. Now, how to remedy it? Only one way. If you wash your wool wash it. Do not drive your sheep into some creek or lake to drink and call them washed; or, better still, do not wash at all. Keep your sheep clean and tag well before shearing. Use no box to put it up, but use a small linen or hemp twine. Bring your wool to market in the same condition as you would expect to buy your sugar or tea, and you will find a ready sale at good prices. If this is done it will be but a short time when our domestic wool will rank, as it should, first in every market and be sought after the same as Australian wool is now."

The Ram's Horn, like everybody else who makes epigram, has to mutilate the truth occasionally. For example:

The devil has more sense than to undertake to make a drunkard out of a stingy man.

This is grossly incorrect. Everybody knows drunkards are the stingiest of men. They'll resort to the meanest and most degrading tricks to get liquor, and a drink gotten at somebody else's expense is the sweetest of drafts to them. It is true that most stingy men are strictly temperate, because they crucify their desires in all directions; but it is arrant nonsense to insinuate that dram-drinking promotes unselfishness, which would be the meaning of *The Ram's Horn's* paragraph, if it has any special meaning. Liquor-drinking may be fairly charged with promoting the meanest kind of selfishness, for it leads a man to sacrifice the good of every human being connected with him to the gratification of a low appetite.

A CAREFUL estimate of keeping sheep in New Mexico shows a cost of 60 cents per head per year. This includes bucks, provisions, herders, extra help in lambing and clipping, as well as all necessary improvements, such as corrals, clipping outfit, etc. These figures are believed to be safe. The wool product is from $1.12 to $1.15 per head annually.

A GENTLEMAN who is well acquainted with Chinese matters attributes much of the difficulties and troubles the missionaries experience to the fact that the Chinese word they use for "Lord" has the same sound—though written differently—as the word for "pig." This makes the phrase, "Lord of Heaven," appear to the Chinese as the celestial "hog," and this gave the basis to the generally accepted idea in China that Christians are hog worshipers. Another unfortunate mistake was the adoption of a green hat for Christian converts which has an obscene significance to the Chinese.

THE Governor of Montana has prohibited the introduction of diseased sheep into that State. That is right; now let the Governors of Kansas, Nebraska, Iowa, and Illinois shut the gates against diseased sheep, and the ranges would hurry to clean up their flocks.

UNFORTUNATELY the repressive oleomargarine legislation does not seem to repress. The Chicago Collector of Internal Revenue reports that for the year ended June 30, 1892, the sale of oleomargarine stamps from the office aggregated $616,161,000, which would mean that in that district alone bogus dairies took away the employment of at least 154,000 hard-working, honest cows.

TROUBLESOME GRASS.

One of our subscribers sent us a specimen of grass which is giving him much trouble. We referred the matter to the Botanical Division of the Agricultural Department, which returned the following reply:

The grass is a *Cyperus*—botanically *Cyperus strigosus*. This, and *Cyperus rotundus* especially, is apt to become weeds in fields. *Cyperus strigosus* is a deep-rooted perennial, and can be eradicated from a field only by deep plowing and cultivation for several years. The closely allied nut grass (*Cyperus rotundus*) is a similar pest. Both require vigorous treatment to insure eradication.

A VERY profitable way for a farmer to spend any leisure that he may have at his command is among the dealers in the articles he produces in the nearest large city. He will learn many things of immense value to him, one of the most important being the great advantage of sending produce to market in the best possible shape and of the highest quality. It costs but little, if any more, to produce a first-class article than an inferior one, and to send it to market in a way that will show its superiority, while the advance in the price obtained is out of all proportion to the labor and cost required.

A RICHMOND (Mo.) man, so says the *Conservator*, has a small flock of sheep that are so prolific that he is likely to have to hire help to count his flock. He has five ewes that gave him 11 lambs—four of them found twins and one brought triplets.

Get up a Club for THE AMERICAN FARMER.

BLESSED is he who has a good crop of apples this Fall, for verily will his pockets bulge out. The crop is short in western New York, Ohio, Indiana, and Michigan. Maine reports a fair crop.

THE AMERICAN FARMER *is only $1 a year.*

COMPLIMENTS.

Hard to Beat.

I received a copy of THE AMERICAN FARMER, and after carefully perusing the same must pronounce it first class in every respect, everything about it—paper, form, typography, and general get-up—is hard to beat. —G. H. TURNER, Denmark, Miss.

Just the Way He Wants It.

THE AMERICAN FARMER is in the shape I want it. If it was smaller, with fine print, I could not read it.—W. B. SPEARING, Punta Gorda, Fla.

BUREAU OF INFORMATION.

Ezekiel Johnston, Chalybeate, Tenn.—Warts are peculiar excrescenses on the skin, and consist of elongations of the papillæ of the skin covered with a hard, dry cuticle. From friction and exposure to the air, their surface comes to have a horny texture, and is rounded off into a small button-like shape. Warts are sometimes formed on the very surface of the skin and are easily removed, but generally they are implanted in the true skin and very firmly held there. Nothing is known of the actual causes of warts. They are supposed to be produced by pressure of the skin and are aggravated by a lack of cleanliness, and often, especially with the young people, they come and go without apparent cause. The hard variety of warts is not communicated by touch, though it seems certain that the soft variety of this eruption, or more properly excrescence, can be communicated from one person to another by contact. The most effective method of removing warts is to pare the outer surface and then touch them with nitrate of silver. A simpler, but quite effective, cure is to keep the surface softened for several days with grease. This will remove them permanently in nearly every instance.

Bezaleel R. Van Duzen, Paducah, Ky.—It is said that the following recipe will make a cement which will mend cast iron and hold the parts together perfectly: Take two ounces of sal ammoniac, one ounce of sublimed sulphur and one pound of cast-iron filings; mix in a mortar and keep the powder perfectly dry. When it is to be used mix it with 20 times its weight of clean iron filings, grind the whole in a mortar, wet with water until it becomes a paste and apply to the parts to be mended. After a while it will become as strong and hard as any part of the metal.

Isaac Jones, Norfolk County, Va.—Between Jan. 1, 1890, and June 30, 1891, 7,150,350 silver dollars were coined in the United States mints. The total value of the production of silver in the United States from 1881 to 1890, inclusive, was $484,055,000.

Henry Gatto, Boaz, Ky.—The United States is the richer by $2,000,000 in money orders never presented for payment. A copy of the first dictionary, made by Chinese scholars B. C. 1109, is said to be still preserved in Pekin.

A SPECIAL OFFER.

The American Farmer for the Rest of 1892 for 25 Cents.

In order to extend the circulation of THE AMERICAN FARMER and give a great number of people a chance to become acquainted with its many good points, we will make a special offer: *We will send the paper from now until Dec. 15, 1892, for 25 cents.* This is a splendid opportunity to get a vast amount of the very best reading matter for a very small sum. Do not fail to embrace it.

Address

THE AMERICAN FARMER,
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RAISE CLUBS.

We want every one to try to raise clubs for THE AMERICAN FARMER. It is a splendid journal, and will find favor in the eyes of all who see it. It ought to be very easy work to get subscribers. We will make good inducements for sons and daughters of farmers to get up clubs. Write for terms to club-raisers, and premium lists.

The Silver Polish Man.

One Summer's day, I'll ne'er forget,
The polish man came round;
"Madame," he said, in dulcet tones,
"Have you the secret found
Of making silver clean and bright
Just like that purchased new?
If not, then let me show you this,
For wonders it will do."

No girl had I. Soiled dishes stood,
Unswept the carpet, too,
"No, no," I said, in frantic haste;
"I cannot stop to view
The brightest gem the world affords,
For while I linger here
The clock moves on with steady pace,
The dinner hour draws near."

I tried to close the open door;
Upon the step he stayed,
And on my ear soft accents stole,
As if some boon he prayed.
"Madame, the morn no brighter shines
Than silver cleaned with this,
And she who buys one little cake,
Has purchased so much bliss."

"No doubt," I said, "its very nice
To make old silver new,
But I this morning do not want
To longer talk with you.
I can not buy, I *will not* buy,
'Twill do no good to stay;
You'll have your labor for your pains,
You'd best move on your way."

Down went his box. A look stole o'er
His suppliant, smiling face,
A patient, martyr-look, as if
He'd found a hardened case.
"Madame," he said, "you know not what
A dreadful thing you do.
An invalid wife I have at home,
And nine small children, too.

"I'm trying hard, *so hard* to make
A living day by day;
You surely will not send me off
Discouraged on my way."
A feeling then of grim despair
Possession of me took;
He'd stay the century out, I knew,
By his determined look.

I meekly drew my money forth,
I yielded to my fate.
I bought a thing I did not want,
A silver polish cake.
With victory crowned he went away;
I slammed the door with vim,
Resolved that man with box or pack
Should ne'er again look in.

I've locked the house securely up,
I've stuffed they keyhole, too,
For fear the silver polish men
May steal like spirits through.
I sit with pistol at my side,
Where I can see the gate;
If one draws nigh, to him I'll be
A swift, avenging Fate.

By the Editor's Fireside.

THERE is an old proverb running in this way, "Let your head save your heels." It is one that is well worth attention; for, though some people are more methodical than others, yet there are few who do not take in the course of the day many steps that might be saved, do much work over twice by constantly dwelling upon it, and in other ways increasing the sum of the effort that they would need to make to accomplish all of their duties. Another thing is, that many women have—I am speaking of work in the home—never learned to do things except in the one way; that is, they will not admit that there can be any improvement upon their mode of doing work. They are what well may be called "Pint-cup women," because they will not take advantage of anything which they have not already gathered into their pint dippers. That dipper of experience never becomes a quart. They carry, for example, the water that they need in some little utensil, back and forth, back and forth, to fill their kettles, when a larger one would have saved them all these steps and left them time and strength for other things. This sort of management goes through everything.

Doubtless you have all seen that sort of woman, but never imagined that you may sometimes have been classed with her. The fact is, that the best housekeeper and the woman who accomplishes the most in the world is she who is always trying to improve upon present methods. She knows that the world moves onward; she knows that just as much improvement is possible in the homely duties of the kitchen as in the machinery that runs a factory. She does not refuse to try experiments because she thinks that the way her mother taught her is the best way, and cannot be improved upon so long as the world stands. She does not refuse to favor herself when she is feeling weary by sitting down to do what may be done in that way almost as well as standing; nor is she afraid of being called lazy because she tries to save health and strength in this way.

It is a good thing for each one of us to look into the matter and see whether we do not sometimes follow the pint-dipper sort of woman in our methods of work. Many of us will be much surprised to find that we are doing just that way. We are making hard work of what might be easy, simply because we have not collected our forces and directed them in the best way. Every housekeeper, and especially every woman who does her own work, needs to look carefully after her ways of accomplishing what she has to do. Many a mother would be spared to her family at the time when she is most needed if she would be less prodigal of her strength in her younger days.

* * *

IT IS not very surprising that men are apt to say when talking about the matter of women's suffrage that the majority of women do not care for it, and, therefore, it is not worth while to make such a change in order to gratify the demands of a few. I say it is not strange when such a large proportion of women accept present conditions without remonstrance, and seemingly without feeling. That condition, however, is rapidly passing away, for the thinking women all over the country are coming to see that the right to vote means the obtaining of other rights which are vital to their welfare, not only where they are wage-earners, but also in the home. They are beginning to see that their influence in every direction would be strengthened, and this is true even in the social world. The day is past in which the "clinger" always takes precedence of the woman able to stand by herself, or rather one who thinks and does not allow other people to think for her.

It is strange, indeed, that any woman at the present day cannot see that the fact of her possessing the ballot will have not the slightest influence in making her less womanly and attractive. Though she have a happy home, and is so situated that it is a matter of indifference, she should remember that the large majority of women are not so fortunate. Even if it is only a small minority whose condition would be bettered, that is a sufficient reason why she should desire to help in making the laws which govern her and the vast army of her sister women.

A writer in the last number of that bright paper, *The Women's Tribune*, puts man's view of the case in a very amusing way. "The disappearances of woman," it says, "from the horizon of man's perception are truly amusing. Now you see her and now you do not. There she stands to earn her own living, to support those dependent upon her, to pay taxes, to fulfil all her obligations to society, the State, and the Nation, or to bear the full penalty if she fail, and man has no difficulty in seeing her. But let her ask to have a voice as to the laws that govern her, or what shall be done with the money she pays for taxes, and she becomes invisible at once."

There is a world of meaning in that paragraph, and it is strange that every woman cannot see it, and that it does not appeal to her common sense.

The world is moving on, however, rapidly in this matter—how rapidly those who are not giving it attention have no idea. It is amusing to hear such persons bring up the old arguments of two or three decades ago with such zest as if they had never been heard of, and not at all as if they were worn out and put in the national ragbag years ago so far as any use is concerned. The question is not now one of right in the minds of the most intelligent class of people, but with those who oppose it is simply one of policy. That is what is the matter with both the Republican and the People's Party.

* * *

THE coming World's Fair will, I believe, have a great influence upon the near future of this question. Even women themselves have small idea of what they have accomplished, and how strong their influence is and can be upon all public matters. Prof. David Swing, in preaching about the convention of women's clubs in the city of Chicago, said: "The scene in this city last week differs greatly from that little affair of 40 years ago. Next year when the nations shall compare notes on this lake shore the Woman's Building, with its contents and history and associations, will bring the blush of shame to those souls who stood in woman's way when her cause was new and her sorrows great. * * * Woman's building was once a slave pen; it after became a tinseled parlor; it will be seen next year in greater proportions; 100 years hence it will not be designated as woman's building, it will be called the temple of humanity; it will contain the human race."

He says this because he believes that we are nearing the period when the terms man and woman will not be used where the word humanity should be employed, and it is because of these great changes which will become so evident to all nations next year that I think this Nation will be better prepared afterward to look upon the question of suffrage for women, not as one of policy, but as one of absolute justice.

A VARIETY OF THINGS

Which the Editor Chats About With the Household.

Little points of etiquet often seem trifling and not necessary to observe, and yet these laws which are accepted in the social world are really necessities to make everything move harmoniously. They are like the oil that is poured upon the machinery that runs great factories. Without it the friction is sure to make what, by and by, produces some great catastrophe. Of course there is a law to be observed in almost everything. For instance, card etiquet is quite necessary to understand if one desires not to appear ignorant and untrained. The fashion for size and style is changing constantly, but one can never be far out of the way if using one of medium size, fine in texture, and white in color. Then the name should appear, engraved in script if possible, through the center of the card, with the address below it in the right-hand corner. The engraved card, by the way, is not very expensive, as one plate can be used for years, and can be purchased in the beginning at the expense of a dollar, and sometimes less. Etiquet says that the married woman should use her husband's name in full, and not the initials

alone. It should never contain the husband's title, as Mrs. Colonel, or Mrs. Doctor, or Mrs. General. At present many women prefer to use their own name, having the maiden name in full preceding the married name, as Mrs. Elizabeth Fuller Jackson. The eldest daughter of the family in society writes only Miss before the family name; younger daughters write the full name. As to the number of cards to be left when calling authorities differ. It has been for the last few years fashionable to leave as many cards as there were persons called upon in the family. This sometimes involves a ludicrous array. Lately people are beginning to return to the old style of a single card for the family.

* * *

The Summer and early Autumn time is always, perhaps, one of trial to those who live in the country, because then there is usually a descent upon them of their relations to the third and fourth generation. From June to November these incursions are likely to keep up, unless the housekeeper has the strength of mind to refuse to receive these seekers after quiet country life. It becomes a question of what hospitality really includes. Certainly there should be a great deal of discrimination on the part of the tired house mother who is thus called upon to receive visitors from so many different places and for whom often she cares so little. Let me give one piece of advice to each and everyone of these homekeepers whose kindness is so often imposed upon. If there are persons or friends whom you feel compelled to receive, or even those you desire to have come to you, be sure to name the length of time for which it will be convenient for you to have them extend their visit. This is really the only safe way. When you stop to think of it, it is not in any sense a breach of hospitality; you know your own circumstances, the amount of strength which you have to use up, and duty to yourself and to your family demands that you do not overtask your purse or your physical resources. Then remember this when you set out to return these visits in the city, and make the same rule for yourself that you desire to have observed by your Summer guests.

* * *

Those who like the New England stories of Miss Mary E. Wilkins, so faultless in their construction and so true to New England life, cannot fail to be interested in her personality. She is young and very much alone in the world, so far as her own family is concerned, for one after another during the first years of her writing her father, mother, and only sister passed into the Beyond. Her home now is in Randolph, Mass., where she has established herself in two pretty rooms which seem to partake of the character of the occupant. Personally she is small, being only five feet tall and very slight. She has a fair, transparent skin, with eyes that seem to change in color with her varying moods. Her hair is golden, and she wears it in heavy braids at the back, and her features are fine and delicately molded, with a sensitive mouth that betokens her nervous temperament. Her stories are always simple in plot, but their charm lies in their fidelity to nature and their rapid transition from the deepest pathos to quaint and amusing situations.

* * *

Window seats are very fashionable just now, and they are really very pleasant and convenient articles. If anyone has a bay window get a carpenter to construct one that will fit in nicely. If he can make the legs look ornamental by turning them, only a cushion will have to be arranged; but if not, a valance of the goods with which the cushion is covered must be added, allowing it to reach the floor. If you have any broad window, however, a window seat is possible; all that is necessary is a board bench, which must be covered in the same way. *The Housekeeper* recommends a very comfortable substitute for the stiff-backed sofa or couch. It is to get a folding cot, 28 or 30 inches wide, and upon this put a two or three-inch deep mattress; throw over it a Bagdad curtain, or any othey style of covering which may be desired, and then with some cushions and a stand with books within easy reach, you have a very comfortable lounging place for leisure hours.

* * *

Yellow rooms have been quite the fad, and indeed they are very pretty if decorated with taste. The different shades of yellow make a rich, warm appearance that is exceedingly attractive, unless the thermometer stands high in the 90's. Now, however, we are told that the yellow room is not healthful; that it has a very depressing effect upon the spirits, and has been known to produce deep, settled melancholy. However, a room decorated sparingly with the different shades of yellow must continue to retain popularity. There need be only a touch of color in the wall hangings and in the curtains of the room; window draperies may be simply ecru instead of a deep yellow, while the floor covering need have but a suspicion of that color, the whole giving, however, a general effect of warmth and sunshine. Especially is this way of furnishing a room desirable where the sun does not enter.

ABOUT HOUSE FURNISHING.

Some Suggestions Regarding the Buying of Furniture.

A very good suggestion was made in a series of articles published in *Harper's Bazaar* in regard to house furnishing. It was that the possessor of a very limited income should buy all of the furniture for the house as if it were to last a lifetime. It must be strong, of good shape, and comfortable. The homekeepers in the desire to make the money go as far as possible and show to great advantage, sometimes purchase articles that look very well at first, but these showy things will be sure very soon to drop to pieces, or at least to look exceedingly shabby. It is better to put a little more money into solid, substantial, and honest pieces of furniture, waiting for other things until money has been laid aside for them, than to purchase the whole supply in the beginning and getting cheaper articles. The same writer does not advise home-made furniture. She says "the materials used will usually cost half enough to buy the finished article at a reliable shop. After the furniture is done and money, time, and strength have been devoted to it, what is the usual result? A 'Toggled-up' article that is rarely comfortable, generally cumbersome, and will come to pieces within a year. A chair made out of a barrel is always a barrel even though covered with raw silk and adorned with velours squares. Far better an honest cane-seated rocker than such a hypocritical, vulgar makeshift."

The writer is perhaps too severe upon these home-made articles. It may be that the country home is situated many miles away from a place where the cane-seated rocker may be purchased, and the barrel is right at hand and can be fixed up with scarcely any expense, so that the housekeeper will find herself compelled to use the latter or go without the chair which she needs. In that case the makeshift is not vulgar. The writer evidently took into her account the large body of people who live close to a furniture market, and who can buy by dint of a little economy a plain, good article without expending strength and energy upon the less desirable one.

Columns of matter are floating around through the newspapers and magazines in regard to the possibilities of furnishing a house so that it will look attractive and be comfortable without the expenditure of any considerable amount of money. Much that is written in this direction is absolute nonsense. It might be called stuffing, for it simply fills up a column, and is no real help to the reader. That house furnishing may be done by one who carefully studies the best way, and calculates her resources before beginning, in a much more satisfactory manner than by persons who go at it in a haphazard style is true; and yet it will require some money to do anything. An ingenious woman may accomplish much with little, but let her be sure before beginning one of these "cheap" articles that it will not in the end cost more in the way of effort and future vexation than it can possibly save.

As said before, buy everything not only with an eye to the present but to the future. Buy a good thing, no matter how plain it may be, and get what is necessary first, and things for embellishment and luxury afterward.

Don't Fret.

When worries and troubles surround you,
Don't fret.
Go to work!
You will always have troubles around you,
You bet,
If you shirk.
* * * * * * *
The world doesn't care for your woes,
Oh, no!
Not a bit!
The man who is wise never shows
His foe
That he's hit.
Every one of your neighbors has griefs of his own;
He greatly prefers to let your griefs alone,
And he doesn't at all enjoy hearing you groan,
So take warning and quit!

—*Somerville Journal.*

A Few Fashion Notes.

Skirts for street wear are still long at the back, although there is a little alteration for the better. A very pleasant change is noticeable in the introduction of a little drapery about the hips, the precursor of more freedom than has been obtained by the very tight skirt worn lately.

Sleeves yet continue large, but are not so high as hitherto. They may be made according to the fancy, the only law in regard to them being that they shall not look stiff.

Bodices are made with some sort of fullness or with trimming that shall give the effect of fullness in some way. The girdles retain their popularity, and are either made of the same material as the dress or are bought ready made for wear. The latter are of ornamental leather, velvet, and for young people of ribbon. Jet girdles are also very popular.

Jackets are to be exceedingly popular during the Fall, and appear both short and long.

Bonnets, unfortunately, continue very small and flat in the crown, a thing which is most uncomfortable for the wearer, and certainly they are far less becoming when they are made with a little more room, so as to be set firmly upon the head. The hats have the same fault. Possibly later in the Winter there may be some change in this direction.

WORK FOR BUSY FINGERS.

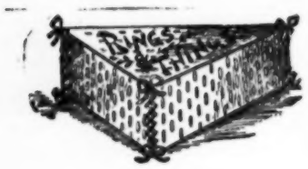
They Make Pretty Things as Described Here.

BEDSPREAD.

Take two yards of Bolton sheeting or any other heavy cream, white, cotton material. Have stamped upon it five groups of very large daffodils tied together with bows and ends of ribbon three-quarters of an inch in width. Connect the bunches with long, wavy streamers of ribbon. Under each bouquet baste white Brussels net. Work the flowers through that and the top material with button-

hole stitch done with yellow silk. Take the stitches quite far apart, so that the work will be slight. Do the stems and small leaves in ordinary outline stitch. The simulated ribbons are worked on each edge in outline stitch with heavy white silk to give the effect of a cord. The center of the ribbon is run with white silk with a long stitch taken lengthwise to give a shiny effect. Cut the thick material away from the flowers, leaving the lace for the filling. Border the spread with Point de Pons lace, five inches in width.

JEWEL BOX.



Cut three triangular pieces of pasteboard and cover with golden-brown plush, and line with gold-colored satin. Join the side sections with narrow gold colored and brown satin ribbon put on to stimulate lacing, and tie in bows at the top and bottom. Bind the other joinings and the edges of the box smoothly with brown satin ribbon. On the lid of the box outline in gold silk the words, "Rings and Things." The cover and bottom must, of course, be of the same size. The sides may be of any desired depth.

SHAVING PAPER HOLDER.

A pretty shaving paper holder may be made by fastening tissue paper, pinked, behind a Japanese fan, which may have a satin bow added at the place where the handle joins the fan.

SOFA PILLOW.

Cover the front of the pillow smoothly with four triangular sections of lavender silk between four long puffs of the lavender silk which meet at the center and diverge at the corners. Over the smooth silk fold the corners of a square of

chamois, which covers the back of the pillow, and cut out the corners in a fancy design showing the silk underneath. Buttonhole the cut-out edges with gold-colored silk, and lavender satin ribbon where the corners and puffs meet at the center.

TABLE COVER.

Take a square of pale-blue silk, or any preferred material. Embroider upon it in stemstitch bunches of pink carnations and blue corn-flowers. Tie narrow pink and blue ribbon in bows and tack over the stems of the flowers. Connect the bunches with the ribbon tacked on in a wavy design. Around the edge of the cover put a wide frill of Platte lace.

For the Home Table.

DEVILED KIDNEYS.

Take two beef's kidneys, soak them in cold water for one-half hour, then remove every vein. To do this it will be necessary to cut the kidney in small pieces. Put these pieces in a saucepan of boiling water and let them stand 15 minutes. Drain off the water, cover again with boiling water and stand 15 minutes. Do this three times, being careful not to let them boil, as it will toughen them. After draining the kidneys, chop them fine. Put two tablespoonfuls of butter in a saucepan and mix with it an even tablespoonful of flour; add one and a half gills of cream and the yolks of four hard-boiled eggs mashed fine; stir until smooth, and then add the kidneys, one-half teaspoonful of salt, and pepper to the taste. Stir all the time until it boils. If liked, this can be covered with bread crumbs and browned in the oven.

SCALLOPED CHICKEN.

Cut the cold cooked chicken into small pieces and to each pint of meat allow one-half pint of sauce made as follows: Melt one tablespoonful of butter and rub in it one even tablespoonful of flour, then add one-half pint of milk; stir continually until it boils, add one-half teaspoonful of salt and a little pepper. Chop four hard-boiled eggs and alternate in layers with the chicken in an earthen dish. Season with a little salt and pepper, and moisten with the sauce. Cover the top with bread crumbs, dot here and there with butter, and bake in a hot oven for 15 minutes.

LEMON OR ORANGE CREAM.

Take one lemon or two oranges, grate, add one cupful of sugar, one-half cup of ice water, and one cupful of cream; beat the whites of three eggs and stir in. Warm a gil of milk in which mix two tablespoonfuls of cornstarch, let thicken and stir in. Set on ice to cool. Whip a quart of cream, flavor with almond and pour over.

FRIED MACARONI.

Boil one pound of macaroni, salted to tase, for 15 minutes, or until soft; drain off the water and stir in the macaroni, three eggs, a little pepper and salt, and some parsley chopped fine. Mix thoroughly together. In a frying-pan heat two tablespoonfuls of lard; put the macaroni in and fry brown, turn and let brown on the other side, put on a plate and serve.

CHOCOLATE CANDY.

Take one cup of grated chocolate, three cupfuls of granulated sugar, a piece of butter the size of a walnut, one cupful of hot water, and one teaspoonful of vanilla. Boil for 10 minutes, stirring constantly; fry in a cup of cold water, and as soon as it is of the consistency of molasses pour into buttered tins. Take a silver knife and stir back and forth until it sugars, then mark off into little squares and set away to cool.

GLADIOLUS.

Easy Ways to Obtain Beautiful and New Varieties, and the Time to Plant Them in Order to Secure Good Results.

EDITOR AMERICAN FARMER: One writer aptly says of them: "The Gladiolus is the glory of the spacious grounds of the wealthy, the pride of the poor man's plot."

A few years ago it was only the wealthy who could afford any but the most common varieties; but now there are many beautiful sorts to be had at a nominal price.

If one is not particular to know the names, mixed bulbs can be bought at from 30 cents per dozen on up, or if bought in quantities, at $2 per 100, and among them are many rare sorts that would cost from 50 cents to $2 a piece if bought from the list of named sorts. Very often by taking a catalog and reading the description of named bulbs it is possible to place or name many of the best bulbs secured in these mixtures.

Named sorts can be bought at prices ranging from 10 cents to $5 a piece, but it is not altogether quality that makes the difference in price. The high-priced ones are new and scarce; but in two or three years they will be more common, and while the blossom will be just as good in every way the price will have come down within the reach of those who could not even think of buying it as a "novelty."

Some people think that the large bulbs will give the largest flowers, but it is not so much the size as the condition of the bulb. I have had bulbs not larger than the end of my thumb throw up larger and finer flower spikes than other bulbs of the same sort which were three times as large.

It is not well to plant Gladiolus bulbs too early, but if planted in time to bloom during the latter part of August and September, the bulb then has time to mature and get solid before they have to be lifted, and therein lies the secret of success.

During the first of the season the bulbs exhaust themselves making foliage and flowers, and must have time to recuperate and harden up after that is done, or the bulbs will be soft and shrivel up during the Winter.

Lift the bulbs before there are any heavy frosts; spread them out in some cool, dry place, until the foliage is perfectly dry and dead; then cut off to within two or three inches of the bulb, put in paper bags or boxes and keep safe from frost, but not in too dry a place.

When lifting the bulbs save all the little bulblets that grow around the base of them, and in the Spring peel off the dark-colored hard case and then plant in trenches; by peeling off this outer shell they germinate sooner, and so get to be larger bulbs the first season. Many of them will bloom the second season, and all should bloom the third.

If you have choice-named sorts, label these little bulblets carefully, as they will come true to markings, and it is the surest way to increase your stock.

Raising Gladiolus from seed is an interesting experiment to try; they will sometimes bloom the second year, and but rarely fail to bloom the third year. I knew of one woman who raised some from seed, and in 19 bulbs had 16 varieties.

The Gladiolus will grow and bloom in almost any sort of soil, but at the same time it will be very much better if given good soil and watered during any very dry weather. It will repay care as well as any plant, though it will stand neglect better than almost any other.—EVA GAILLARD, Girard, Pa.

SHEEP AND WOOL.

Shearings.

No ewe should be bred before she is two years old, because it is a strain upon constitutional vigor that impairs her future usefulness.

It is not an improved breed of sheep that is wanted so much as an improved breed of sheepmen that could improve their flocks on natural principles.

As a rule, when two animals nick, as breeders call it, they should be bred together as long as they live, and in most cases the progeny continue to improve.

Ninety years ago Mr. Livingston wrote of his merino wool: "Forty-four and one-half yards of fine close-wool cloth, 45 inches wide as it came from the loom, have been made from 16 pounds and three-quarters of it."

Has the ram you bought last year to improve your flock met your expectations? Has he given lambs that are an improvement on their mothers? If not, he was not good enough.

Time is money. A lot of good lambs a few days ahead in the market will get the highest price every time. There is a nick of time, but you must know how to hit it, or the other fellow is ahead.

In Texas the rule is to have two crops of wool a year—Spring and Fall clips. In the North sheep are sheared only once a year—the Spring. This is the harvest of farmers who keep wool flocks.

The world's production of wool since 1810: 1810, 5,109,663,200 pounds; 1820, 5,427,612,600; 1830, 5,753,904,200; 1840, 6,867,524,000; 1850, 9,102,177,950; 1860, 11,035,485,400; 1870, 14,883,648,300; 1880, 17,080,363,490; 1890, 19,462,037,820.

How many rams to the 100 ewes? is asked by a south Maryland farmer. If allowed to rough it with the flock it is safest to have three. If kept in quiet yard apart from the flock in daytime and properly fed two will be plenty. If carefully handled and cared for one will answer the purpose. So it depends, you see; it depends.

This is the season for maggot trouble. A horn that comes too close to the head offers a ready place for the flies to deposit their eggs and a most difficult place to treat for maggot. It is a good plan to use a saw—either saw the horn off or slice off enough to give a space between the horn and the head. Protect the ram's eyes with a cloth or piece of sacking.

Is foot-rot catching? asks a new man in the business. If you once get it in the flock you will think so. Fix a shoot in door of sheep barn so the flock must pass through it in going out and in, and keep dry-slacked lime two or three inches deep in this shoot or passway. It won't be a reliable cure for badly-affected sheep, but it will keep others from taking it. Lime kills the germs.

By the combination of mutton and wool sheep raisers find an advantage in having two cash-flock products to send to market a year. With proper management, resembling that practiced by hog raisers, a sheep farmer may have something fit for the market all the time. A crop of wool, some Spring lambs, some wethers or barren ewes fed to a finish for the butcher at any or all seasons of the year, would make the farmer able to realize ready money from the flock as might be needed.

Shearing early lambs has been referred to in the columns of THE AMERICAN FARMER, and by way of remembrance we allude to it again. No man to-day, July 25, with the mercury up in the 90's, could question the importance of shedding a thick woolen coat. The comfort, thrift, and good health would certainly be promoted by shearing all lambs that have two inches of wool on them. The two fleeces would be more valuable, and there would be more of it than if allowed to remain until next June. Try it and report.

Wool is low not alone in this country but all over the world. It is higher here than anywhere else. It is a good time to keep a steady hand and a cool head; it is a good time to cultivate sheep and wool, and the Christian graces; it is a good time to watch your member of Congress, and the kind of a man you vote for. Don't be caught napping on this question with the candidates for your votes. Talk this over with your neighbors; call it up in caucuses and conventions; pledge your candidates to your interests. If he will not pledge himself, then work like a Trojan to defeat him. Somebody may be defeated, but see to it that the lawmakers and those who execute the laws understand you and your wishes on the wool question. Do not be misled with the fact that your candidate does not know or cares nothing about wool. He will do all the more harm by reason of his ignorance or indifference. Wool has been kicked into politics because wool growers have been easily imposed upon. The most vigorous watchfulness must be shown, or the threatened tariff reform will accomplish its purpose, which will be the ruin of the American wool industry, "and don't you forget it, neither!"

In selecting animals for breeding it is always proper to consider the breeding of their progenitors. You can't always tell what the breeding of a ram will be, no matter how good or bad its sire or dam may be, but the old rule that like begets like need not be disregarded by anybody. An incident on this line comes in at this point. One of the most enterprising sheep-breeding firms in the West own a prodigy of excellence in a ram of merino blood. He placed their flock at the head of the list in two or three years—made them a hatfull of money. He had been bought on the judgment of somebody else; but it was so that one of this breeding firm visited Vermont. The very first thing he did was to visit the flock from which this marvelous ram came, and especially to see the mother of his famous stock ram. To his humiliation she was the very opposite of what he expected. She no more resembled his ram than day is like night. She had no standard of excellence, so far as could be seen, though she had a standard pedigree in the book. She had all her fame from that one lamb that no doubt had come from the meritorious animals farther back on the list. That disgusted man never told this story in the West, but it is a fact from a trustworthy source.

Varieties of Merinos in Spain.

In the beginning of this century there were varieties among the sheep known in Spain as the merino sheep. They differed in size, form, fineness of wool, and beauty. The rams, like the merino sheep of to-day, had large, spiral horns, and the ewes generally were hornless. The wool had the same general characteristics of merino wools and the staple was about three inches in length. They are described by Mr. Livingston with much care, and their wool in particular as similar to the merino sheep of to-day. The varieties of 100 years ago found in Spain "may be accounted for by the care or fancy of the original cultivators," which is true of the varieties of merino sheep in this and other parts of the world. The merinos found in Castile and Leon were the largest and gave the finest fleeces. Other provinces had merinos with a wool differing in length, but all very fine.

There were two systems of handling merino sheep in Spain that were quite dissimilar. The most interesting and famous merinos of Spain were transhumanic, or traveling flocks, and migrated from the south to the north in the Spring and returned to their Winter pastures in the Fall. This was practiced every year, and was generally supposed to be absolutely necessary to the fine quality of their wool. In 1800 there were 5,000,000 of these. The other system was similar to that practiced by farmers in this country, and the flocks were called Estantas or stationary flocks. Bishoff gives these at 8,000,000 head.

The driving of sheep from 800 to 1,000 miles a year, though perhaps favorable to vigorous constitutions, as only the most robust could endure the hardship of such journeyings, was a severe ordeal, and inconvenient as well as disastrous to the people of the country. This, however, was of small importance to the owners of flocks.

The Summer resort was the mountainous regions in the north and northeastern part of Spain, where the Summer climate was delightful and the pasturage all that could be desired. The plains of Estremadura, the Winter resort for these traveling sheep, was so free from frosts that no provisions were necessary other than the pasturage with which the country abounded.

Other than these reasons, however, existed for the changing of flocks. During the long and fierce wars with the invaders—the Moors—the armies destroyed everything that came in their way that could be utilized for food. As is usually the case in a country where civil war exists, agriculture was neglected, and no property was safe that could not be readily removed from place to place for safety. Flocks suited such a state of affairs, and Spain became famous in this particular. The greater part of traveling flocks became the property of the King and his courtiers, and the clergy. Oppressive laws were enacted and agriculture was still further distressed and destroyed. The law compelling the cultivators of the soil to leave a road 90 yards wide through an extent of rich lands, vineyard, and other crops, for 400 or 500 miles was a most provoking nuisance to the people. Besides this, commons large enough to furnish food for the flocks had to be left at convenient intervals. This disregard for the welfare of agriculturists as a protection to the sheep industry of Spain was finally corrected, but irreparable damage had been done to the people who cultivated the soil.

The families or varieties of merino sheep in Spain took their names from the owners of the flocks. Of the Spanish merinos introduced into this country the record shows that Col. David Humphreys, in 1802, introduced 91 Infantado sheep. In 1809, William Jarvis introduced 200 of the Escurial flock. In 1810, Mr. Jarvis imported 1,400 Paulars, 1,300 Aqueirres, 200 Escurials, 200 Montarcas, and some Negrettis. These are mainly the origin of what are known in the United States as the American merino sheep. By singular circumstances, not necessary to relate here, all American merino flock trace their pedigree to two Spanish varieties, viz., the Infantado and Paulars. If we are to believe what the fortunate breeders of these two varieties say, the Infantado and Paular were the superiors of all the Spanish races or families. Mr. Jarvis bred each variety separate, as was the custom in Spain, for eight or 10 years, but afterward bred them all together. It is fair to say the Infantado, now known as the Atwood sheep, owe their perpetuation to the good judgment and inflexible character of Stephen Atwood, of Connecticut, who saw no good reason for interbreeding his sheep with any other sort, and finally had the indorsement of his friends, and reaped the reward of all his labors in the sale of his surplus stock.

The Paular sheep were the basis of what are known in Vermont and elsewhere as the Spanish-American merino sheep, and have a history as unique as the Atwoods, and as clear a title to purity of breeding.

Some Pointed Pointers.

The progressive farmer is a success. So is the progressive sheep raiser. The farmer raises such crops as he can turn into cash; so must the successful sheep raiser.

The intelligent farmer raises such crops as are suited to the conditions of his farm; the sheep raiser must do the same thing.

The best farmers study the special cultivation of each crop he raises; so must the best sheep raisers.

The farmers know the importance of putting their crops on the market in honest, attractive condition; so must the sheep raiser.

The farmer knows the value of the best seeds and varieties of crops to raise in his locality; so should the sheep farmer.

The farmer studies the markets for his hay, hogs, and horses, and only grows the kind that sells best; so has the wisest sheep raisers got to do, or play second fiddle to the man that does.

Just why two animals should not produce two lambs of remarkable merit alike has long been a wonder. For instance, the sire and dam of Mr. Hammond's celebrated Sweepstake. Other cases of like curiosity and disappointment are on record, and without a remedy or an explanation.

Some Experience of a Prairie Sheep Breeder.

We all have experience in life; we must have if we become experts in our business. Some of these experiences we do not care to talk about; at the time these were misfortunes; they were the most stupid kind of mistakes. But after awhile the calamity is in a measure forgotten; and when the spells of telling "the truth, the whole truth, and nothing but the truth," comes over us we do not hate to tell all about the most severe lessons we ever had to learn.

The experience here referred to was a number of years ago, and during one of those hard years that some of us will always remember. All the crops had been short, and feed supplies were short, both of grain and hay. The flock came to Winter in pretty fair condition, and we hoped by hook or crook to pull through to grass in some shape. As a precaution, we bred the ewes to lamb in May, when we confidently expected to have plenty of grass. The corn crop was not only poor in quantity, but exceedingly poor in quality. An extra supply of wheat bran was secured to counteract the constipating effects of dry shelled corn. By Midwinter the small supply of hay was gone, and all the corn-fodder had been fed out. Fortunately, we had an enormous stack of wheat straw, well stacked, to which the flock had free access, and the racks were liberally supplied all the time. The sheep were examined carefully to see how they got along. The droppings were studied, and rations of bran increased to keep the bowels in healthy condition. The skin was examined to see if that healthy, pinkish hue was retained. We knew that the first indications of going wrong could be detected at this point. The oldest and thinnest sheep showed the pinky skin was changing in color. Then the stronger ones showed a purple color instead of that lovely, healthy hue so desirable, so anxiously wished for.

March finally came, but the long, hard Winter hung on without any signs of letting up. By this time the strongest and best sheep showed the steady decline, and the weakest were badly "off."

As is usually the case when a man is closely pressed for feed, every ewe was going to have a lamb. It seemed as though they would hardly wait for the time to fully come. The flock register was consulted to see if such were possible, and it was not; it would not happen until after the 1st of May. The sun, moon, and stars were consulted to know, if possibly, Winter would hold out much longer. The oldest inhabitant was asked for a hopeful opinion. That year April corresponded to our typical March. The weather was rainy, foggy, and hopeless. Some of the thinnest sheep died, and few of the best were lost by apoplexy. The long-wished-for grass finally began to appear. The wheat fields were eaten to the very roots. (I am free to say without the least damage to the crop.) The lambs that we were dreading so nervously came in the very time we had planned for, and were easily saved. Never was grass and sunshine so welcomed by a mortal man as it was that May and June. It was indeed an experience not to be forgotten. I remember that corn was 80 cents a bushel that Winter, and though we almost counted the grains, there was never a lessening of the corn rations. We fed a bushel and a half to the 100 sheep, and a like measure of wheat bran mixed with it, as it all depended upon keeping up their strength with grain and filling them with salted wheat straw. Twenty years ago this experience was too fresh in my mind and too tender a subject for my pride as a shepherd to permit so frank a statement as is here written.

A Difference in Profits, and Why.

Ordinarily the profit on one single sheep is not very large. It is the aggregate that makes up the cash account of the sheepman.

The item that turns the profit or loss one way or the other may not be a big one, but whatever it may be is worth knowing. It may be the extra pound of mutton in a given time with a given amount of feed. It may be the extra half pound of wool, or the quality may command three or four cents more per pound. It may not be the size of the carcass, but the increased value per pound. It may be the rapid growth and development of the animal that makes all the difference. A saving of one day in feeding is a gain; a few days is quite an item of profit. The skill of the feeder by which greater gains are gotten in shape is worth looking into. A Minnesota feeder of Western sheep has just secured the premium a second time for the best lot of Minnesota fatted Western sheep fit for export. He attributes his success to having secured the services of an extra good feeder. Some sheep will lay on flesh more rapidly than others; some sheep will take on fat rather than grow lean meat; some sheep will make more out of the same feed than another; some feeds will make fat and another flesh; some feeds give a finer, stronger staple of wool and a better-flavored mutton. Here are two bunches of fat lambs: one averages three or four pounds more than the other, but they are not so attractive in style nor so uniform in size, so they must sell for less price. Another pointer: two lots of extra good mutton sheep; they weigh the same, but one easily brings a dollar a head more than the other. Why? One lot is fat and the other is flesh. People eat flesh; they do not buy fat.

Political Duties of the Hour.

The sheep raiser is a busy man nowadays watching for parasites and politicians. He has his hands, head, and heart full if he is trying to keep in the straight and narrow way and keep from being imposed upon by the silver-tongued orator who is abroad in the land trying to make votes. The American Farmer is not in any such business, but just wants to say to you keep cool, brother, and use your own head that God Almighty has given you. You know more about what is for your own good than any campaign orator that is on the stump. So don't be bamboozled into measures that you know are against your interest. The sheepmen are a unit, and are not going to be scared nor hurt if they keep their heads and feet cool and in the right paths. The jackanape politician need not think sheepmen are fools, or going to be foolished out of his head.

At the Front.

Mr. J. S. Woodward was delivering an address before the New Jersey State Board of Agriculture, and was asked, How to have sheep pick up the fallen fruit in the orchard?

He replied: If you want to enrich the orchard with sheep; if you want to manure it well; if you want to keep down the sprouts, and have them eat every fallen apple, just put in two or three times as many sheep as the field will support. That is the way to do it, but don't starve them, thinking to force them to it. No man with brains and a kind heart would think of it; feed them all they need to keep them thriving. * * * Feed them on the kind of food to make it necessary for them to have carbonaceous food; feed them on bran, oil meal, dried brewers' grains, or something of that nature—very nitrogenous—which makes it necessary for the sheep to have plenty of carbonaceous elements to balance the ration. You will be surprised to see what they will do; they will eat everything and anything. You can't drive a sheep. He is worse than a hog; but if one goes all will go, and never stop.

Prof. Craig, of Wisconsin, says: Sheep to be rightly managed must come in contact with nature. Sheep are more easily influenced than any other domestic animals. By feed and environment you can so change any breed of sheep that they will differ greatly from their progenitors in a few generations. It will hardly pay to raise sheep for wool, but it will pay to raise them for mutton. There is another thing to be considered. In growing mutton sheep you are at the same time growing the wool that will sell the best to-day, and this wool is the medium combing. The cloth that is worn by the common people is made largely from this wool. Then, too, that wool cannot be produced in any country so readily and cheaply as it can be produced in this country. So in going into the production of mutton sheep we attain both of these ends. We make mutton for three cents per pound and it will sell for six cents per pound, and that leaves a good margin of profit, and then you have the wool extra and some other valuable results of sheep-raising. One way to establish a flock is to start with common sheep and grade up, but this depends much on the man. Buy a good ram and breed up. In using a pure-bred animal you get all the advantages of long and continuous breeding. In the breeding no animal will you get more of the benefit of others labors than in the breeding of sheep.

A good sheep is one that will pay its way in wool; that will pay its expenses in mutton; that the lambs and manure cost nothing.

Are Wools Too Cheap?

The expression is daily heard that wools "were never so cheap before," but a comparison of to-day's values with previous years shows that with the exception of XX Ohio, nearly all grades of wool since Jan. 1, 1885, have at times been even lower than now, while woolen goods were never so cheap. For instance, medium unwashed fleeces, although not as low since June, 1886, were lower in 1885 than before or since. With one exception one-quarter blood wools have not been so low as at present since July, 1888, although they were much lower in 1885. Ohio fine unwashed, with one brief exception, has not been so low since August, 1888, although it reached the latter same low level in July, 1886. Ohio XX fleeces, however, have never been as cheap as they are to-day. This is owing to the competition of foreign wools in London, which market during the past Spring also touched the lowest point on record for merino wools. Although XX Ohio fine wools are lower than they have ever before been in the United States, their value on the London market at the same time is still less than half of their value in the United States, notwithstanding that prices here on this quality are the lowest on record. If an American had sold his wool in free trade London every year since the passage of the tariff law in 1867 his sales would have averaged 51 per cent. below the prices paid here. With free wool London prices would also be American prices, and the latter could no longer be double London prices, as has been the average case since 1867.—*Justice Bateman & Co.*

The Short Cut to Improvement.

Mr. Stephen Powers, on this point, says: "For instance, in a flock of sheep numbering between 500 and 600, one year there were two lambs that were motherless, and they were taken and raised by a neighbor woman as pets. She was a generous feeder; the only question with her was whether an animal could be induced to eat a little more or not. They were practically matured at two years old, and they yielded fleeces every year for six or seven years that weighed from 12 to 14 pounds. The average of the flock was about five pounds at that time, and the best fleece in the flock never reached 11 pounds. These two lambs were taken at random.

"In Florida it is a common occurrence for a Northern settler to take a heifer calf of the native scrub stock and bring it up to maturity on a generous diet of bran, sweet potatoes or cassava, green-cut millet or guinea grass, and develop a cow that, at four or five years of age, will give six, seven, eight quarts at a milking, while a cow brought up in the ordinary way rarely gives over three quarts, often only one or two."

Some Spanish Practices.

The Spanish shepherds practiced marking their lambs by branding the nose with a hot iron.

Shearing time came in May. One hundred and fifty men were employed to shear 1,000 sheep; each man was expected to shear eight per day; but if rams, only five. The sheep stood on their feet while being sheared. For a time after shearing they were carefully housed from storms and the chilling air of the night. The flocks were not permitted to eat the grass while the dew was on it, nor were they suffered to drink out of brook or of standing water wherein hail had fallen, experience having taught them that on such occasions they are in danger of losing them all.

THE APIARY.

Hummings.

There is no profit in letting bees make wax. Honey is what is wanted, not wax.

The wood queen-excluders do not seem to take much. The bees enlarge the cuts and the queens go above.

Excelsior—the material used by upholsterers—is said to be an excellent thing for beekeepers. When ignited it makes a dense smoke.

The cause of the death of bees in a hive is quite often due to starvation. And what may seem worse, the owner of the apiary rarely knows the cause.

Farmers who have bees should plant some sweet clover for them. When the clover is of no more use to the bees it can be cut, cured, and tried as hay.

More honey may be obtained by having the surplus receptacles arranged upon three sides of the brood than when we depend upon the top of the hive alone.

If robber bees attack your hives wait until near sundown before searching for them. At that time they will be unable to do as much harm as they could do earlier in the day.

Some beekeepers prefer to have the bait sections in the center of the super, while there are others who think that it is best to have it placed in one corner. Dr. C. C. Miller thinks that one in the center is as good as one in each corner.

It is curious to observe what an irritating effect the breath of a person has upon the inmates of a hive. If you are anxious to know the results go on a warm evening and breathe two or three times on the bees which are clustered around the hive.

England is taking steps to encourage interest in beekeeping. Parliament has appropriated $3,000 to be expended in free lessons for teaching practical beeculture. This may be a small sum, yet it is just $3,000 more than the Government of the United States has appropriated for the same purpose.

A prominent apiarist asserts that a few colonies of bees judiciously placed will revive a fruit farm from a non-paying to a profitable investment. His assertion may be somewhat exaggerated, yet, nevertheless, it is a well-known fact that bees have a beneficial effect upon grapevines, fruit trees, and other plants. For this reason it is worth while for farmers to have a few colonies on their farms.

It very often happens that the apiarist has to introduce a new queen in one of his hives. When such is the case it is best to cage the queen before she is placed in the hive. This will give her a chance to get acquainted, and when liberated everything will go on smoothly. If, however, the queen is put in the hive uncaged there is a great likelihood of a disturbance being raised, since there will be some bees that are willing to accept her, while others will do all they possibly can to kill or expel the intruder.

The Illinois beekeepers are having bad luck. But little honey was made last year, and dwindling has done serious damage this year in consequence. Many colonies that were alive and to all appearance doing well on the 1st of March dwindled away, and the 1st of June found many hives tenantless. The Spring was cold, wet, and backward, which proved the death warrant to feeble colonies, which might have survived had the weather been warmer. This year's weather has been so unfavorable as to increase the misfortunes resulting from that of last year.

A writer in the *British Bee Journal* has this to say of the Palestine and Tunisian, or Punic, bees: "I have had Tunisian bees in my apiary, and found them a busy, prolific, but a very robbing race. Just to mention to you one case, I had one hive of Tunisians in 1886, and several hundred Palestines. At the end of April a window of the honey-house was left open by accident without being covered by the wire guaze. In this room there were several tanks holding 500 pounds of honey each, and one happened not to be covered with the muslin. The orange blossom was over, and the robbers made a start; but imagine my surprise when I found dead Tunisians one inch thick deep, and only a few Palestines. I should call them 99 per cent. greater robbers than Palestines; at any rate, the dead were in this proportion. They are very tenacious robbers, and very difficult to send away, and contrast unfavorably with our Palestines, who will leave off robbing after an hour or two, even in the worst cases."

Beekeeping for Pleasure.

There is pleasure in beekeeping if the beekeeper be interested in outdoor life and in the study of Nature in all her moods and forms. The curiosities of the hive, the marvelous work that goes on within the hive, is not only entertaining, but also instructive and inspiring.

In keeping bees for pleasure expense is a secondary consideration, although it may be very little. The first thing to be done in preparation is to secure a hive adapted to beekeeping for pleasure. It must be an observatory hive, or a hive so constructed that it may be thrown open to view at any time. This is usually provided for by giving the hive glass sides. But the glass sides must be covered with shutters, for bees work in the dark, and if the shutters be not applied, the bees will cover the glass with wax and propolis.

Neither of these will make the hive absolutely dark, but the bees make it as dark as they can with the means at their disposal. To keep out the light and to protect the hive let the sides be covered by shutters or blinds that may be easily and quickly removed.

The hive may be ornamental to any degree desired. It may represent the dwelling-house in miniature, a church, the Capitol at Washington, or any other building in which the beekeeper has personal or historical interest. The observatory hive, however, in any form, does not always give a satisfactory view of the interior working. Of course, nothing can be seen in a so-called observatory hive except that which goes on on the two outside frames, or rather on the outside of the two outside frames.

If the colony be weak, or the season be poor, the bees may not use the outside frames, and no opportunity will be given to observe the movements within. This does not occur usually, however, and if it did, the bees afford entertainment and study out of the hive. To watch in an observatory hive the building of comb is very interesting. When foundation is used the bees simply draw out and thin down the wax, adding a little of their own, perhaps a third.

All this wax comes from the bee-exudes from the body between the plates or scales in minute particles, and the bees work it over with their "fingers" and shape it into comb. A wonderful provision is wax. It may be said in passing that wax was not intended to be eaten. It was given the bees that they might have means of storing honey for their own use. It is useful in the arts, but is unfit for food.

When bees build comb without the help of foundation the work is still more interesting to watch, although it cannot be watched long at a time, for the bees, at first unmindful, soon become alarmed by the admission of light and stop work. It has happened, however, that a queen on a frame taken from a hive and held in the sun has continued for several minutes to deposit eggs in cells. The queen goes head first into the cell; first, to see, probably, if the cell be in a proper condition to receive the egg.

All combs are built downward. The edge of the comb where the bees are at work increases rapidly under the deft fingers of the workers. The work of bees at every stage is absolutely perfect. There is no staging to build or to take down. Hanging head downward, the bee with wonderful instinct and skill builds its hexagonal cells absolutely correct, as if based upon and provided for by mathematical science. This work goes on so slowly that the human eye, in the time it observes, does not perceive any increase, but if looked at again in 24 hours the addition to the structure is seen.

It is certainly interesting to see the bees, the pollen gatherers, come in to the hive and unload their baskets of pollen. Pollen is the fertilizing agent in flowers, and is used by the bees to feed the young bees after it is mixed with honey. What dainty feed! Honey and pollen! No wonder bees are so extraordinary in many ways!

The pollen is collected in "baskets" on the thighs of the hind legs. These baskets are crowded so full that often the "mass" of pollen, about one sixteenth of an inch in diameter, falls out. The bee enters the hive and proceeds to unload the pollen baskets by giving them a spasmodic kick with the middle feet, the bee having six feet. If they, the bits of pollen, do not come out quickly, perhaps the packer bee assists, taking hold of the pollen and pulling, reminding one of a man taking off another man's boots. The packer then rolls the pollen into a cell and then goes in after it, head first, and batters it down with his head that it may be packed solid.

The queen may lay more than a thousand eggs a day—24 hours—and may in the hight of the season lay 3,000 eggs in 24 hours. These eggs, one in each cell, lie in the bottom of the cell. Before they hatch a tiny drop of honey is placed in the cell, and in this drop the egg floats, or nearly so, in order that when it hatches, when the shell breaks and the larva comes out, it may have something upon which to feed immediately. If 3,000 eggs hatch in a day, think of the "bee cradles" to rock, the number of feeders, nurses, pollen gatherers, and honey gatherers to supply the family.

What a factory this is! In addition to this force are the fanners, the bees placed, perhaps by order of the queen, or by instinct, throughout the hive to keep their wings in motion to produce a current of air. If this were not done sometimes the comb would melt; the fanning gives pure air and cools the hive. The sound of the bees' wing makes what is called "the hum of the hive" referred to by some writers who appear to think that the hum is the result of the bees working. Bees work in perfect silence; that is, no sound comes from their work, and when there is no fanning, complete silence reigns as far as the ear can detect, although the entire colony is at work as usual.

If an observatory hive be in a room on a resounding box or table it becomes a veritable music box on warm nights. The sound produced by the movement of the wings is melodious, if monotonous, and drooning. The tone remains the same, although it increases or diminishes. Toward morning, early or late, according to the weather, when the air cools, absolute silence prevails in the hive, which may be broken by dropping a nail on the hive. Then breaks forth the "hum" made by all the bees, slight from the dropping of a nail, louder if a spike be dropped. The raising and moving the wings makes the bees' note of alarm. They do not hear the dropping of the nail; they feel it.

The beekeeper for pleasure looks for honey—some honey from his bees. He may have this in one-pound and two-pound boxes, comb honey, or he may have extracted honey if he will take the trouble to extract it, but extracting is the work of a professional beekeeper. If the hive be properly arranged the bees may be led to work in irregular sections or boxes, to fill glass globes, tumblers, jars with the finest of honey in white comb. This is ornament as well as food for the table. Combs in the shape of stars and crosses have been made and filled with honey by the bees.

Much good may come from keeping bees for pleasure. The mind is turned from daily routine and the weight is lifted. The movements of the bees in and out of the hive and the many "bee problems" interest the mind and keep it busy for the time being with something that delights and rests it.

The exercise, too, in the open air brings healing for many ills. An eminent physician once said, "If I could get the people out of doors, and give their minds and bodies something to do, I could cure them without any medicine." May the ranks of beekeepers increase, for to them will come a greater degree of health, and as a result, more prosperity and more happiness.—JULIA ALLYN.

THE "BLESSED BEES."

How They Have Fared During the Present Season.

Reports of Beekeepers in all Parts of the Country.

ILLINOIS.

The season for surplus honey in this neighborhood is now over. The crop is below the average. My small apiary of 15 colonies at this place will perhaps average 25 pounds of section honey per colony, and this has been secured mainly from sweet clover, which grows in divers places here in abundance. The first bloom of this clover is now gone, but it will rebloom in a week or two and then continue to bloom till frost, but the bees will store most of the honey therefrom from now on in the brood chamber. Owing to continued wet weather during June the bees secured hardly honey enough from white clover to live and breed upon. My bees sent out but two swarms that I know of. The indications for a big crop of white clover for the coming year are very good. White clover and sweet clover are the main sources for surplus honey here. Basswood yields some honey, but the most of it has been destroyed by the wood chopper.

My main apiary is in Richland County, Wis., but the honey crop up there is almost a total failure this year. The main source in that section for surplus honey is basswood, but this was the "off" year for it to bloom, and only a small fraction of the trees did bloom. If the bees up there get enough honey this season to last them through the Winter, the beemen will be thankful. Considerable attention is being paid in Wisconsin to alsike clover, by both farmers and beekeepers, and the coming year there will perhaps be 50 acres in bloom within range of my bees. From this source I shall expect considerable surplus honey, as I consider one acre of alsike equivalent at least to 10 acres of white clover as a honey crop.—M. M. BALDRIDGE, St. Charles, Ill.

IOWA.

The honey harvest from white clover is a fine one for bees in this neighborhood. I started into the harvest with 22 colonies, and have extracted up to date about 875 pounds. If the weather is favorable there is a good prospect to double the amount. My bees have not worked on basswood for several years, they have to go from one-half to three miles to get to timber, and white clover is all around them, so they take what is nearest.—FRED BECKLY, Learsboro, Iowa.

MICHIGAN.

I had 14 swarms, and lost three. It seems to be the same all over the country, and everyone lost more or less. Since Spring they have been doing well. I am a farmer seven miles from Fremont.—S. SWEET, Fremont, Mich.

NEBRASKA.

Bees are working well at the present time. Prospects are good for honey. But the season is late. Our main honey crop comes from hartshorn; it lasts until frost.—J. B. RIGGENS, Swanton, Neb.

OHIO.

I have just read reports in the August number of THE AMERICAN FARMER of the numerous beekeepers in the different States, and will add my experience. I commenced with three colonies in 1874; the third year I had 13 colonies. In August of 1877 I noticed my colonies were growing weaker every day. I commenced looking for the cause, and soon found that my orchard was alive with the king or bee bird. I waged war on them at once, nor did I let up till I had killed 44 birds; the result was my colonies soon became strong and paid me well up to this season. I lost nine colonies in March and April, but my bees are doing very well now. I keep a few acres of alsike clover, and sow buckwheat every season. The golden rod will be in bloom in two weeks, when I expect to give a good report. I still keep up war on the bee bird. I visited a neighbor a few days since who has 20 colonies. I asked him how his bees were doing. "Oh!" said he, "I guess they are not doing much." I went out to look at them, and I found three colonies on the ground. The weeds had grown so thick around the entrance as to completely shut out the bees, but luckily the sun had warped the top so the bees were actually working immediately under the lid. He used Langstroth hive, I use the same, and will take 28 pounds from each colony. We find a home market at 14 cents.—WM. BENSINGER, McComb, O.

In regard to bees in this locality, it has been so far, better than an average year for them. Bee pasturage has been good, and they are making a good supply of honey. The weather has been warm and they have had plenty of working days.—POSTMASTER, Wassie, O.

TEXAS.

The honey harvest this season is the poorest for the last five years. I extracted about 200 pounds from 40 colonies, and dark honey at that. It is of so inferior a quality that I don't want to sell it. I will keep it for brood rearing next Spring.—EDWARD J. KNEBEL, Spring Branch, Tex.

WISCONSIN.

Since writing you last our agricultural affairs have taken quite a turn and we are meeting with a happy surprise. We did not expect any honey this year, for up to July 14 the hives were empty and the combs perfectly dry. Up to the present we have realized fully one-half of our usual crop, and if the Fall flow of honey favors us we will be satisfied. Swarming did not amount to anything. Most of the colonies killed off their drones early in July and destroyed the queen cells. Up to date I have extracted from 73 colonies, Spring count, 2,000 pounds of good quality honey.—REV. STEPHEN ROESE, Maiden Rock, Wis.

Bees, How Long Do They Live?

From what I see in print it would seem that not everyone has a correct idea regarding the life of the bee, for in a paper which I chanced to pick up not long ago I read of a colony of bees which had lived in a certain log for 20 years, the language used showing that the writer of the item believed that the same individual bees had resided in that place for that length of time. Again, I find in another paper that the life of a worker bee in the Summer season is but 30 days. Seeing that there is so wide an opinion on the subject, I thought it might not be amiss to say a few words on the subject in THE AMERICAN FARMER. I have several times conducted experiments along this line to see if I could arrive at the truth in the matter. Before any of the yellow races of bees came to our shores this was a matter hard to determine, but with their advent all became plain, for we now had a chance to find out which were the old bees, and which the young, by their color. The experiments which I have tried were as follows: Take a black colony of bees, and about the 10th of June, or when honey comes in freely, introduce an Italian queen into it. In 21 days the last black bee will have hatched and the Italian put in an appearance, providing the Italian commences to lay as soon as she is put in the hive, as she will do if she is introduced by some plan of direct introduction. Now, mark this date on the hive, and it will be found that on the 46th day from that time nothing but Italian bees can be seen in the hive. At 40 days many black bees will be seen going out and in at the entrance, but on the 44th day only now and then one can be seen, so that we may safely say that 45 days is the length of a bee's life in the working season. Bees wear out, or die of old age, just in proportion to the labor they perform, and so it happens that what holds good with them in the busy season does not apply at all in the Fall and Winter months, when they go into a state of repose or partial hibernation, such as the apiarist calls "acquiescent state." We now find that a bee lives from Fall to Spring, or to be more exact, if we introduce an Italian queen into a colony of black bees during the forepart of September, we shall find some black bees in this hive on the 1st of the next June, if they Winter well, thus showing that during the Winter season bees may live eight months. Because bees swarm in June and July, many seem to think that this comes on the account of the old bees having lived to this time, to which is added the numerous hatching young bees of this season of the year. This is a mistake, for the bees which have been Wintered over are now dying faster than at any other time, if they are not already dead.

Swarming comes from the reason that the queen can and does lay many times more eggs at one season of the year than she does at another. In May she begins to lay prolificly, so that by June 1 she is laying from 2,000 to 3,000 eggs every day. These eggs stay in this form for three days, when they hatch out into little larva, which are now abundantly fed, so that in six days they fill the cell, when they are sealed over and hid from view for the next 12 days, when the now perfect bee bites its way out of the cell. This bee is scarcely out of its cell before the older bees clean the cell out so that it is ready for the queen to lay in again, which she immediately does. Thus we see that it takes only 21 days for the queen to get one generation of bees on the stage of action, while they are 45 days in dying off. This gives us two and one-seventh generations reared to where one dies off; consequently the hive becomes so populous when the queen does her best that swarming is the result. As Fall comes on the queen ceases her egg-laying to a certain extent, only sufficient to keep the population of the hive good; hence there are no more or less therein than is necessary for the welfare of the colony during the Winter. Yet one other item of interest right here, which is that if we watch this hive in which we were testing the age of bees in June we will find that the first yellow bee which we see will take its first flight on the afternoon of the sixth day after it is hatched, thus showing that all of the bees stay in the hive till they are six days old, when the colony is in a normal condition. If we continue to watch we shall find that the next day there are more of these yellow bees flying at this time of day, which number increases until the 16th day, yet on no day do we see any of these yellow bees leaving the hive and returning in the forenoon, while the black laborers are as busy then as at any other time of day. This shows that unless forced to do so no bee is a gatherer of honey till 16 days old, for the flights which you have seen these yellow bees enjoying in the afternoon are what the apiarist calls "the young bees out for a playspell." On the forenoon of the 16th day the first yellow bees come in loaded, which shows us that if we would receive the most profit from our bees we must have the eggs for those bees laid at least 37 days before the honey harvest. Again, if we watch the hive on the morning of the 14th or 15th day we shall see only black bees going in and out of the entrance, yet if we remove the cover and look in the surplus arrangement we shall see only yellow bees at work there. This shows that the young bees are the inside workers of the hive, which build comb, store the honey, etc., and also shows that the bees which collect the honey do not deposit the same in the cells; so all entrances directly to the surplus arrangement are superfluous.—G. M. DOOLITTLE, Borodino, N. Y.

Queens and Robbers.

EDITOR AMERICAN FARMER: Here is a word to the farmer who keeps a few colonies of bees to supply him with the daintiest of sweets known to man.

Thousands of colonies die from a prevailing cause of which the keepers seem entirely ignorant. After the flow of honey in the Fall pilferers or robber bees become numerous, and may often be seen flitting around the entrance to the hives. They manage to slip in some way, and on meeting the queen give her such a sting that her days are numbered. This seems wisely and deliberately planned, for they very well know that if their queen is dethroned the bees become demoralized and are more easily robbed of their sweets; and then it is too late to raise a new queen.

The keeper should be careful to see that each colony is supplied with a queen in the early Spring. If any are queenless he should provide one either by putting in a frame containing eggs from another hive, or by purchasing from a queen breeder, and introducing her by some one of the many methods used.

The farmer, as a rule, is not careful enough, and does not give sufficient time and study to this branch of work. Let him examine his colonies late in the Fall. If queenless, they will do very well through the Winter, and commence to work in the Spring. But with no young bees to hatch, and the old ones dying out, robbing, which is sure to take place the second or third day that the bees fly in the Spring, will soon work destruction among the hives. Then the moth worm enters in and soon destroys the combs, and the farmer in the meantime wondering why his colonies are all dead, finally attributes it to freezing, which is seldom the cause. If honey is found in the hive the colony was queenless in the Fall, and if none is found the bees were robbed and starved. There are other causes, but none so common and at the same time so unobserved as this.

Closely examine the bees in the Spring and Fall. Remember what a home is without a mother.—I. A. GOLDEN, Reinersville, O.

The growers of flax in New Zealand propose to send 25 tons of well-dressed flax to be placed on exhibition at the World's Fair.

THE DAIRY.

Skimmings.

Cleanliness is one of the prime requisites of the dairy.

Scientific breeding is the basis of profit in live stock, and especially in the dairy.

Wheat bran is safer to give to a cow that is soon to calve than corn meal or other fattening food.

Butter can be made at 10 cents per pound by feeding the cows corn during the Summer and ensilage in cold weather.

There is always bound to be one black sheep in a flock, and so in dairying there is always bound to be inferior cows in with the stock.

Very often good butter is spoiled by the quality of the salt which is worked in it. It is better to pay a few cents more for good salt and use that.

There are a good many animals in the dairy which are excellent milkers, but they do not possess the power of transmitting this quality to their offsprings.

The thing for the dairyman to do is to learn how to breed cows according to the laws of the dairy, just as roadsters are bred according to the laws of the trotter.

We find the following in an exchange, and there is some truth in it: A scrub may yield a profit, but a pure-bred animal would have yielded a larger profit, under the same circumstances.

By feeding rightly the dairyman may produce cows rivaling the racehorse, but this method will not make milkers; nor will a horseman make a roadster by feeding green foods and corn with linseed meal and clover hay.

One of the greatest mistakes made by dairymen is the neglect of Winter dairying. It is hard to maintain an even temperature in the dairy during the warm Summer months, but in the Winter time this can be easily done by heat.

The milker who, as he milks, reaches well up onto the udder and secures the milk with a steady pull, instead of a jerky motion, will secure more and better milk in a season than one who milks by the simple open and shut of the hand.

The statement is made that in order to secure the most butter fat the udder should be worked in when milking the cow. It is claimed that by the simple working of the udder butter fats will come with the milk which would otherwise remain in the cow.

The milk pail has suffered by the hot weather which prevailed in some sections of the country during the month of August. The advantage of having shade trees and plenty of water for the cows during the warm weather was plainly demonstrated.

There is nothing like a certainty. When breeding full-blooded animals we may be reasonably sure to expect something good, but the trouble with scrub stock is that we do not know what we are going to get when we breed it. A scrub cow may be an elegant milker—many of them are—but she may never have a calf that will be good for anything in the direction of the dairy.

THE DAIRY.

The Making of Pure Cheese the Only Way to Increase its Sale.

EDITOR AMERICAN FARMER: Having pointed out the necessity of securing the best of cows and never keeping those that do not pay a steady profit; and also calling your attention to the importance and necessity of adopting silos and ensilage with your Summer pastures in order to produce milk at its minimum cost, and then the perfect and thorough manufacture of butter and cheese, in my former articles, allow me to say a few words upon the situation that confronts the American dairy farmer.

The fact is patent that our foreign trade in dairy products has within the past 10 years become nearly ruined, and I do not believe overproduction can be shown as being the cause. Production has not kept pace with increase of population and wealth in the European States, if statistics are to be accepted as the fair basis for calculations, and other causes must be responsible for this calamity. I think it is all due to the manufacture and shipment of an inferior quality of butter and cheese, more especially cheese, and in addition to this the vile and infamous hog grease, cottonseed oil, and scrap fat oleo butter, and oleo oil.

So rapid has the trade in this latter class of goods developed that it alone has almost ruined the sale and use of genuine butter and cheese. Eastern people dare not make the use of cheese for food they did a few years ago, for instead of its being an innocent and effective aid to digestion, and also a very nutritious food, it is now the opposite, and much of it will paralyze the human stomach. Transportation between this country and the East is so speedy and perfect that our dairy product should be delivered in Liverpool, London, Paris, and all those cities in prime order.

Years ago I never thought it risky at all to ship good, full-cream cheese direct to those markets and hope for good, fair returns. In fact, we were absolutely certain of it. But to-day, with the bulk of shipment, there being skimmed cheese and filled cheese, the trade is lost and consumers have quit the use of cheese because it was so difficult to buy that which was fit for human food.

The area of land in America suitable for dairy farming cannot be greatly increased, and to-day, with such a quality of cheese as I have upon my table for daily use, and no other allowed to go upon the market, the home consumption of cheese would increase so fast that our factories and individual dairies could not begin to supply it, much less send it abroad. Farmers must rectify this blunder. They have the power, and most all the say in the matter. So large an amount of the cheese product is made in factory upon the co-operative plan, where farmers vote to skim the milk at home, that this mistake is almost entirely due to their foolish and greedy policy.

Cheese makers would much rather make a pound of cheese on the average of nine pounds of good, new full-cream milk than to use 11 pounds of half-skimmed milk; and the little butter they can save for home use is the worst steal in its consequences they ever made in their lives. The full-cream cheese the manufacturer can show with pride. He will handle it with care, and the increase in price will more than make up for all the butter the farmers can save out of the milk at home.

As producers we must improve quality to hold our old prices; or, if that goes down, we must increase the amount of the product with the same cost in order to hold our place in this fast age and day of our world. Other industries are pared down in profits and more than made good by manufacturers of increased production and sale with no greater cost. The dairy product cannot be greatly increased, but its quality can be so advanced that fortunes are behind it if farmers do their part. Legislation is needed to correct the trouble—National legislation at that—and the farmer force must do this or stand behind it and push.

A National law on branding of cheese is needed as much as one for oleomargarine, and good honest goods should be so plainly branded that consumers can buy them in confidence and know that they are eating pure and wholesome food. It is difficult to purchase cheese under our present law that is fit to eat, for dealers have no restraint placed upon them, and law is needed to make them honest and improve the appetites of consumers.

The day is fast approaching when counterfeit food products will not be tolerated in America. The present pure food laws of Ohio ought to become National laws, and the public sentiment of our people should be so agitated that this reform will come. It takes some little time to educate dealers that consumers do not want burnt beans and chickory for coffee, yellow clay for prepared mustard, scorched Indian meal for black pepper, infamous petroleum settlings with cotton-seed fats in filled cheese, and the only thing that will stop it is law and its enforcement—gospel is powerless.—H. TALCOTT.

Grade the Stock.

In our last issue we had an article on the champion records of some Jersey cows. Some farmers may have read it with incredulity, yet, nevertheless, what was stated was solid truth. The dairymen who read it may have wondered how the cow was forced to give such a yield.

The manner in which the animal was "forced" to give such a large yield was by simple and scientific feeding. Simple because common food was used, and scientific because only food was given which abounded in milk-producing elements. This is where the forcing came in.

But now the question arises in the minds of dairymen, Can we by giving plenty of good feed secure as good results? Probably you can, but the greatest probability that you cannot.

The cow is a machine, literally speaking. At one end raw material is put in and the finished product comes out at the other end. Some machines are better than others, and are capable of doing more work, and consequently are more valuable. This is exactly the case with the stock of the dairy.

Signal's Lilly Flagg, the animal which has given the greatest yield ever known, is a full-blooded Jersey. While the feed given may have been an important factor, yet a still greater item was the fact that she was a full-blooded animal, and as such was capable of converting all the food given her into milk.

Here is the trouble with the stock of the average dairyman. Scrubs comprise his herd, and they are not able to convert all the food given them into milk. Their organism is such that it is impossible for them to do it. You cannot squeeze blood out of a turnip, neither can you get the quantity of milk given by a full-blooded animal out of a scrub. If this could be done there would be no further need of full-blooded animals.

What, then, can the dairyman do? He cannot afford to purchase full-blooded animals of the class of Lilly Flagg. If all of the stock of a dairy gave such a yield as this animal it would not be long, if a market could be found for the products, before the owner would be an exceedingly rich man.

It has been found by experience that there is a good profit made from animals which give a yield of 300 pounds of milk a year. This may seem small in comparison with the yield of the champion. Of course, there are a good many dairy cows which give over 300 pounds of milk a year, but if all of the cows in the dairy give that amount each annually, there would be a profit in the business. If cows can be graded up so that one animal will give 500 pounds of milk a year on a certain kind of feed, while another with the same feed only gives 300 pounds, do you not think that you would prefer the one giving the largest quantity of milk? By judicious breeding and management a dairyman can raise the milk-producing qualities of his stock, and there is no reason why he should not. If he can possibly do so, buy a full-blooded bull, and the milk qualities of stock thus produced will be increased considerably. If he cannot afford to do this let him breed carefully from the best stock he owns, and he will obtain gratifying results.

The Best Way to Preserve Milk.

There are a good many dairymen who are experimenting by putting substances in the milk to preserve it. We caution our readers against this. It is dangerous. Some substance may be placed in the milk which by chemical action may make the liquid positively dangerous for consumption. The dairyman who thus experiments should be pitied, and his actions regarded as being deplorable.

Saltpeter and sugar were formerly mixed with milk to preserve it, but thorough tests have proved this practice to be of positive damage. Cleanliness and skill are the two best helps to preserve milk and the closer the dairyman adheres to them the better will be the quality of his products.

The average landsman believes that i shivers a vessel's timbers when she get coaled.

Asthma The African Kola Plant, discovered in Congo, West Africa, is Nature's Sure Cure for Asthma. **Cure Guaranteed of No Pay.** Export Office, 1164 Broadway, New York. For **Large Trial Case, FREE by Mail,** address KOLA IMPORTING CO., 135 Vine St., Cincinnati, Ohio.

THE GARDEN.

Pluckings.

Tomatoes should not grow too much vine.

Low-growing vegetables may be cultivated between berry bushes.

Potatoes should be kept in the coolest and darkest place possible.

When transplanting, have the roots straight and in their natural position.

Tomato leaves are also said to make a good insecticide if steeped in water and sprinkled over plants.

The unsightly little toad is useful, if not ornamental. Knats, bugs, slugs, and moths vanish quickly when he is around, so let him make his home in the garden.

Cultivate late potatoes the same as the Spring crop. As an advantage to the potato, level cultivation is best, but when slightly ridged or hilled they can be more easily plowed out.

If the garden is well planned, three crops can be secured in one season, but the ground must be kept occupied. As soon as one crop has matured another must be ready to take its place.

Anthrænose, which means rusty spots on bean pods, is a disease which is apt to affect the yellow wax variety of snap bean. The best remedy for it so far discovered is to dust the vines with lime on its first appearance.

The bagging of tomatoes has been resorted to as a protection against rot, and with very good results. The successful bagging of grapes led to the experiment. Give it a trial next season. It is now too late to meet with much success.

An excellent way to deceive the cucumber bug is to sprinkle the vines with tobacco, so that he will not recognize them as his natural home. Tobacco dust should be sprinkled liberally from the time the vines are up until the blossoms come.

Mixing pyrethrum with four or five parts of flour makes a good insecticide to dust over the foliage of plants, and a cure recommended for the green fly, cabbage maggot, and all belonging to this class is one ounce muriate of potash in one pint of water.

An old farmer says that rose bugs "will not go upon a plant they cannot see through." To prove it he shows vines and bushes trained against walls or buildings, left unharmed, while those standing in an open field had their buds completely devoured.

The first demand of the gardener is for lettuce, and he begins his round of profit when he can deliver the large, crisp heads ahead of his neighbor. Seed for lettuce plants must be started in the Fall, Wintered in cold frames, and sown in February in the hot-bed.

Seed of the White Barletta, or of the Queen onion, if sown now, will make a fine crop for pickling before cold weather. The heaviest croppers are the Mammoth Pompeii and the White Garganus, which look very much alike. The former is said to be superior to all Italian onions.

Nitrate of soda increases the yield of tomatoes, as experiments have proved, both alone and together with phosphoric acid and potash. In a trial on poor land nitrate of soda was not found profitable. The soil must be adapted for the crop, which means a deep, sandy loam in good state of fertility.

There is a theory to the effect that soil exhaustion is due to a change in the arrangements of the soil grains, and it will be tested whether the value of fertilizers is in their physical effects on the texture of the soil, or the arrangements of the soil grains, which changes the relation of the soil to moisture and heat.

Vegetables which take the whole season to grow should not be planted near or among the early ones. For example, if carrots and parsnips are planted with lettuce, peas, and beets, when these latter are out of the way, the carrots and parsnips will be standing, to interfere with the succeeding crop.

An illustrated article on the pea and bean weevil has been issued by the Agricultural Department. A remedy for the pea weevil consists in confining seed peas in a closed vessel for two seasons. Before planting, a good plan is to throw them into water, for the infected seed will float and may be separated from the others.

The soil of the garden should be thoroughly pulverized before sowing seed. The principle reason why many seeds fail to grow is because the soil is not pressed firmly around them, but is left in coarse lumps. Use the steel rake. It is essential in making the earth fine and preventing the weeds from growing, and is better than the hoe.

The flea beetle is a comparatively new enemy of the potato. It is a good deal like the well-known cabbage flea which has done such injury to turnips and radishes, and has recently taken to the tomato and potato. It gathers under the leaves and is hard to reach, the only way being by means of Paris green sprayed through a curved spout or tube ending in a nozzle curved upward, so that the mixture may be thrown upon them.

The value of spraying celery with carbonate of copper, to prevent blight, has been tested by Dr. Halstead, of the New Jersey Experiment Station. He began the first part of August last year, after the blight was well established, and sprayed regularly once a week. He selected two rows which were as near alike as possible, spraying one and leaving the other unsprayed. In November, when the celery was dug, cleaned, and weighed, the sprayed row yielded 124 pounds and the other 72 pounds, which is less than three-fifths as much.

Should The Tassels be Removed From Corn?

In 1890 an experiment was made by the Cornell Experiment Station to prove a beneficial result by removing the tassels from corn. Their calculations showed a gain of 50 per cent. over the rows on which the tassels were allowed to remain. This led to a like experiment being tried by the Ohio station in 1891, but with contrary results. Thirty-two rows were selected for the trial, and the tassels were pulled from each alternate row about Aug. 1. Four rows from which the tassels had been removed were shocked together, and four of the other rows were shocked together, and so on throughout the 32 rows. When husked, these shock rows were weighed separately, the merchantable corn was separated from the unmerchantable and the yield per acre of each calculated. The unmerchantable corn from the plots from which the tassels had been removed averaged 26, while from the other rows it was 21 per cent., and the average yield per acre was about one bushel less than where the corn was left undisturbed.

It is thought that perhaps the tassels were not removed early enough before the stalk had given its vitality to their development. The theory is that if they are pulled, the strength that would otherwise go to them and the production of pollen will be used in forming grains, thus producing more corn.

A Word for the Garden.

Almost every agricultural paper has something to say toward persuading the farmer to give more attention to his garden. Though there has been an increase shown in that direction, still the garden, as a rule, is not one-fourth as large as it should be.

As everyone knows, the chief point is to have good soil, for a garden on poor soil will not pay for the planting. So, no matter how small the patch, let its soil be the best which can be found on the farm. Horse power should be used for the larger part of the work, but of course not for the small vegetables. It is exasperating work to plow a little garden, and it can be plowed to the best advantage if arranged just outside the yards and alongside the main fields, where there will be room for turning. It is not well to have trees growing in the garden, especially where the atmosphere is dry.

In the thousands of new farms being opened up, let the garden be well planned, the area increased, and the products varied; and let fresh vegetables form a larger proportion of the food of the family. This will be found a promoter of both economy and health, and a foe to the Doctor and the Sheriff.

Care of the Garden.

"One year's weeds give seven years' seeds." Take vigorous measures and kill the weeds now, for this is the time when they do most mischief, while ripening the seed. It is also an exceedingly busy time on the farm, and if the farmer himself cannot give his attention to weeding, he can press into service the younger members of his family. Even the girls can help, and the work will not hurt them. Wide-brimmed hats will keep off the tan, and if their hands must be protected they can wear gloves. Annuals which grow from seed and ripen the same year are not hard to destroy, by keeping them mowed or plowed under, but it may take a term of years to completely eradicate them. The same is true of the biennials; that is, those which do not ripen until the second year. The perennials are not so easy to exterminate, for they spread both from root and cuttings as well as from the seed, but if kept closely cut to the ground, so that the leaves will not develop, they will die out in the course of a few years.

An Underrated Vegetable.

Kale is hardier than cabbage, and makes excellent greens for Winter and early Spring, yet it is little known here and is rarely found in American gardens. Its real name is Borecole, and it is also called Brussels sprouts. It is very common in southern Turkey, and forms an important article of food in Great Britain. Plants should be set in early September, and planted about three feet apart each way. They will make a quick growth, and are so hardy that they will grow until quite late.

Kale is a variety of the cabbage, and should be cultivated like that vegetable. It is said to have its flavor improved by frost, and in England and Scotland it grows beautifully green all Winter without any protection. Two of the best Winter varieties are the Green Curled Scotch and the Purple German Curled; then there are valuable dwarf varieties, which are sown in the Fall and cultivated like spinach for Spring use. Some varieties have the leaves beautifully cut and curled, and are both purple and green in color. These are highly ornamental and might well be used for decorative purposes. To some this idea may lack sentiment, but having once seen these beautiful leaves, all narrow prejudice against this humble vegetable will be overruled.

How to Care for the Raspberry.

For planting raspberries Fall seems to be the preferred time. The ground selected should be prepared beforehand and made free from weeds. Have it well enriched, for this is a fruit which needs to be well fed, and if this is done annually the patch will last an indefinite time. Plant four feet apart if in the garden, but if in the field where horses are used, seven feet is not too great. The number of canes to a hill should be regulated in the same way. For the garden six is enough, allowing more for the field. Whether to cut off the tops or not is a debatable question. When this is done the side shoots push out and the plant takes a bush form. The argument in favor of it is that the bush form gives more fruit, but if this is so the berries are not so large, and it is a mere question of quality or quantity. Raspberry canes always need support, and if left untied will be beaten down and destroyed by storms.

To Arms and Conquer!

Too much cannot be said against neglecting to fight the numerous insect pests which plants are heir to. For years the Agricultural Bureau has provided for the suppression of disease among animals and the protection of live stock; and it is equally as important that the spread of noxious insects from farm to farm should be prevented. If these pests infest your fields and gardens, remember that they will soon threaten your neighbor's also unless you apply some effective remedy. By neglect the amount of injury done is enormous, and it is not an evil which time will soften. The longer it is left the greater does the evil become, until at last the vast insect armies may be more than you can overthrow.

THE ORCHARD.

Cullings.

Open-headed trees bear best fruit.

It is better not to stir a porous soil too much.

Make your grape cuttings from ripened canes in the Fall, when the vines are pruned and before they have been exposed to severe cold.

When pears change color and the stem shows a readiness to part from the branch on gently raising the fruit, and when the worm-eaten specimens ripen, then it is time to gather the fruit.

The State of Missouri will have its fruit interests fully represented at the World's Fair. Specimens of 1892 will be preserved in crystal jars, a carload of which has been procured. Fresh fruits, carried in cold storage, will also be exhibited, and the fruits of 1893 as they ripen.

On sandy soils potash nearly always gives satisfaction, and its effects are apt to endure for several seasons. The best form in which to apply it is in wood ashes, as they are composed largely of lime. If wood ashes cannot be obtained, use the high-grade sulphate of potash, which gives immediate results on soils.

The roots of pear trees may be easily injured by plowing among them, as they run so near the ground. They will not do well in heavily-sodded land, as the roots of both tree and grass feed near the surface. It is a good plan to keep small pigs or poultry under them to keep down the grass, and they will also destroy many of the insects.

For both the peach and apple borer, take fresh lime slacked with old soap suds and make about the consistency of whitewash. Where one peck of lime is used, add half a gallon of crude carbolic acid, four pounds of sulphur and one gallon of soft soap, and stir it well together. This is said to be certain death to millers, beetles, and eggs.

The peach crop this year is short, and prices are high. Southern New England orchards are quite full, but New York has only 40 per cent., and reports from New Castle, Kent, Sussex, and the Eastern Shore, show that on the Delaware peninsula there will be only 40 per cent. of a full crop. California has hope of an excellent crop, but then California has everything.

The Wild Goose is one of the most popular varieties of the plum, but this is due not so much to the quality of the fruit as to its hardiness, and because it ripens early. The Miner is said to be about the hardiest well-known variety of the Hortulana type. It does well in northern Illinois, but in Wisconsin, Iowa, Nebraska, and farther north only the American class seem to thrive.

It pays to take some of the best of the grape crop and pack away in cold storage, for the price paid for them is so high that they prove profitable to the grower. They are found upon hotel tables late in the Winter, and when properly kept in cold storage are almost as good several months later as when picked. The skins may be a little wrinkled, but they are sweet and juicy.

BERRIES AND PEARS.

Fine Fruit Recommended by an Experienced Grower.

Mr. John Cook, the well-known florist of Baltimore, and the originator of a number of new roses, including the Souvenir of Wootten, which are conspicuous for their merits and popular approval, and who brings to the work of rose hybridization a degree of scientific skill and extensive practical experience not often combined, is also an extensive fruit grower, producing on his farm on the Old Frederick Road great quantities of fruits, which are celebrated locally for their fair appearance and superior quality. And he has given us for THE AMERICAN FARMER some few points, which will be noted with interest.

Erie blackberry has proved so far, considering health, vigor, habit of growth, and size of berry, about the best he has yet grown. Wilson's Early is a very handsome berry, but in the course of five years it develops double (infertile) blossoms on the majority of its stalks, thus destroying all chances of profit, as a plantation ought to last, with good care, eight or 10 years, or longer. The Erie has shown no rust in his experience with it, now extending over four years. This variety resembles in appearance the Lawton, but the habit of the canes is more branching and it suckers less. All the varieties of blackberries, such as Thornless, Snyder, etc., which are grown at the North, because the larger sorts Winter-kill, are two small for this market.

Of raspberries, while the Cuthbert is the largest and best eating of the American kinds, it is somewhat too late for market growers, as it runs too far into the blackberry season. The Hansel, which is a smaller berry, makes amends for this fault by ripening a little before strawberries are over, and has just about given its full crop as blackberries come in.

The "Japanese wineberry," as it is called, is a raspberry more beautiful than useful. It is of attractive color, and the berry sets in a cup, which, with the branches and leaves likewise, are covered with moss, quite unique in appearance, but having too much seed and too little pulp to become a favorite for the table, though its peculiar tart and vinous flavor adapts it well for preserving.

Thompson's Early is somewhat brighter in color than Hansel, which is an advantage, though so far it has proved no earlier here than that variety.

Mr. Cook makes his main crop the Hansel, having practically abandoned the Cuthbert, which, however, remains a desirable and valuable sort for home use.

Of strawberries, the reliance for the main crop is Bubach's No. 5, a handsome grower, with rich, dark-green foliage, holding its color throughout the entire season, and a great bearer of large, well formed, and fine flavored berries, nearly (some berries fully) as large as Sharpless, and producing at least one-third more. Sharpless has been superceded by it. No other variety is used to fertilize the Bubach, it being held that the formation of the pulp of the berry is the end in view in cultivation, and not the production of seed, and that the development of that desirable part is not influenced by, nor dependent upon, the fertilization of the seed embryos, and goes on entirely independent of that process.

Hoffman's seeding is a good solid shipping berry, fully 10 days ahead of Bubach, but not an abundant enough bearer to be profitable; Wilson gets rusty and loses its leaves, and Crescent gives, after the first year, too small fruit unless they are thinned, a process requiring too much labor. These sorts, consequently, have all been discarded and plowed up.

Parker Earle, a new introduction, has handsome, strong foliage, but has not yet been tested as to fruit.

Amongst pears, the most profitable of all, judging from an experience of 20 years, but of course limited by the conditions of his own place, Mr. Cook esteems the Seckel and Duchess as the most profitable of all. Of numerous varieties planted by him these stand out fine, large, handsome trees, healthy, productive, and profitable. The Seckles and Standard, 20 years planted, and give annual crops of 10 to 15 three-peck boxes to the tree. The Duchess dwarfs, now 15 years from the nursery, were loaded last year, as they are this, with large, perfect fruit. This sort is systematically pruned every year. If they produce long shoots these are pruned moderately so as not to develop great growth the following year; if the growth is very short one year they are then pruned severely to encourage wood growth the following season.

Danas Hovey is a pear which deserves greater attention than it receives. This is the variety which comes from California under the name of Winter Seckel. It ripens here in November, but may be kept in good condition until Christmas. It is of a sprightly vinous, but less cloying, flavor than the Seckel, and ranks deservedly in the very first rank of American pears.

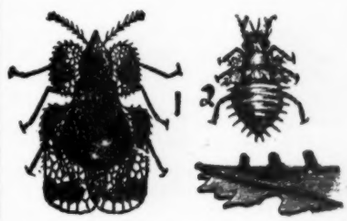
Mr. Cook is experimenting in fertilizing the Kieffer and the Duchess with the Seckel, and looks with much interest to the fruiting of the seedlings now growing. Kieffer, he thinks, is the poor man's pear, as the Concord is the poor man's grape; it gives great quantities of fruit, even if it be not of higher quality than second or third class. For cooking purposes it promises to be a great acquisition.

Root Pruning.

EDITOR AMERICAN FARMER: In his very interesting and valuable article on root pruning, which recently appeared in your paper, Prof. Brunk is too modest by half in ascribing to me the sole credit (if any there was, for the discovery) of bringing to notice the theory of root pruning for transplanted trees. The fact is we both hit upon it almost simultaneously, and as far as I am concerned by pure accident, as nearly all valuable points in horticulture are usually found out. I am glad to see Prof. Brunk making such exhaustive experiments on the subject, and hope that he will leave undug some of all the variously-treated trees. The value of root pruning shows more and more plainly as the trees grow older. The Maryland Experiment Station may congratulate itself on having so accurate and able a worker in the field of horticulture as the professor. The agricultural college of Texas made a great mistake in letting him go, for it is hard to find a man in whom energy, industry, and a faculty of close observation and quick perception are more thoroughly united than in him. I predict for him a bright career in his profession, and hope he will continue his investigation of this important subject and give the public the results from time to time.—H. M. STRINGFELLOW, Hitchcock, Tex.

Another Insect Enemy.

A writer from Hinds County, Miss., complains of an insect which for two years has infested her Meech's prolific quince trees. It is small and gauzy, with a silver glitter on its wings; the younger ones look like mold or rust, and all live upon the underside of the leaf; they soon make the leaves turn red and brown and fall from the trees before the Summer is over.



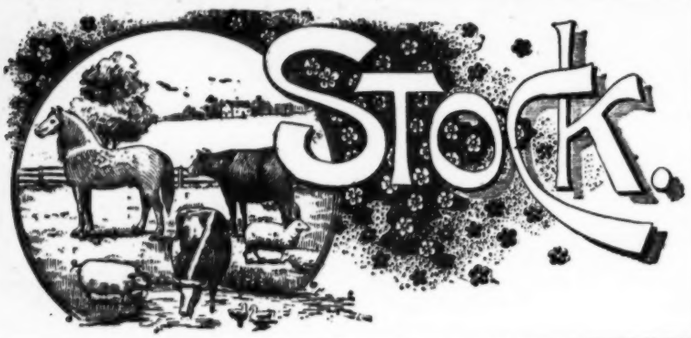
The *Orchard and Garden* identifies this as a Tingitid, and possibly the Corythuca arcuata, which has been found upon a number of different plants. It is small and inconspicuous, but very singular when viewed through a microscope. It has thin and very curiously-meshed wing covers. The sides of the thorax are expanded into a membrane, and an odd hood-like formation extends out from the head. The young somewhat resemble the grown ones, except that they have no wings and their bodies are armed with sharp spines (Fig. 2). The eggs remind one of minute cannon (Fig. 3) imbedded in the underside of the leaf and along the veins. When this insect has imbibed the juice of the leaves through its sharp beak for a season, there is little wonder that they turn brown and fall. These, with other rubbish under the trees, should be carefully raked together and burned, and the trees should be sprayed with a dilute kerosene emulsion. Arsenic does no good, as the insect never gnaws the leaves and it will not be poisoned by it.

Hints About Orchard Trees.

Many trees exhaust themselves in an attempt to produce fruit, and only produce a worthless kind, when a little trouble and expenditure to supply them with fertilizer would both strengthen the tree and make the fruit salable.

When sprouts grow up from the roots of trees they take up the nourishment which belongs to the tree. They should be well kept down and not permitted to grow even an inch high. Whitewashing the trunks is an excellent practice, for in this way the insects and eggs harbored by the bark are completly destroyed.

It is said that in Normandy no less than 5,000 different named varieties of apples are grown for the manufacture of cider.



Stable Talk.

When rye is fed to horses use a laxative with it.

While oil cake is injurious to mares in foal corn is not.

A poultice of fresh slacked lime and lard is said to be a sure cure for lumpy jaw.

Knee-sprung horses should be shod with a shoe the heel of which is thicker than the toes.

It is poor policy to turn the horses out in the pasture at nights and let them secure their own food.

The rule of express companies in feeding horses is 10 pounds of hay and four quarts of oats per meal.

It is claimed that weakness of the hoof is transmitted. Farmers should bear this in mind when breeding.

Rye should never be fed to mares in foal, as it produces abortion, and its use to working horses should be confined.

It is a mistake to apply any greasy or oily ointment to the horse's hoof. The pores are clogged and injury is likely to be wrought.

Cornstalks do not make a very good feed for colts, as the great amount of sugar which the stalks contain is liable to produce worms.

The advice of a prominent veterinarian is that new corn should not be fed until after six or seven weeks of freezing weather, on account of its carbonaceous and gaseous nature.

Do not wait until the colt is too old before you begin to break him in. The sooner you begin to do this the better, because when the animal is young it never forgets anything whenever learned.

Do not give the horses wilted grass while in the stable. If the grass cannot be given them fresh let it dry as hay. Wilted grass is liable to pack in the animal's stomach, and possibly be the cause of colic.

Stock having wholly relied upon the pastures for sustenance may have a more or less impoverished condition of the blood, which may result as a consequence in an ulcerous condition of the system. A feed of ground oats and bran mashes, with a little oil meal, would be beneficial.

Farmers do not want the kind of cattle that will barely exist or live on the least amount of poor feed or poorer care, or rather no care at all, or as some say, on hazel brush and pennyroyal; but the animal is wanted that will convert the greatest amount of the farm products into cash, and at the same time do so with a profit.

A writer in speaking of the merits of the Shorthorn says that they have improved the herds of cattle of America more than all other improved cattle that were ever brought here. They have raised the average weight of thousands of our beef cattle from 200 to 500 pounds per head, and reduced the selling age a whole year, besides greatly increasing the selling price.

The General Purpose Animal.

EDITOR AMERICAN FARMER: I remember reading some time ago in an agricultural paper a statement of a cattle breeder of Maryland who gave the ranking of the different breeds as general purpose animals, milk, butter, and beef animals. The Jerseys, he says, have but one quality to recommend them, which is that of making butter, and for this purpose he names them first He regards the Holstein as a general purpose cow, since she is a fair butter cow, gives plenty of milk, and as a cheese cow knows no superior.

In his estimation the Jerseys occupy a very low place for general purposes and as dairy cattle. He places them first as butter dairy cattle, because from the same amount of food and number of pounds of milk they will produce more butter than any other breed. He ranks the second breeds for the several purposes used as follows: General purposes—First, Holstein; second, Guernseys; third, Ayrshires; fourth, Devons; fifth, Jerseys. Milk—First, Holstein; second, Ayrshire; third, Guernseys; fourth, Devons; fifth, Jerseys. Butter alone—First, Jerseys; second, Holsteins; third, Guernseys. Beef alone—First, Shorthorn; second, Herefords; third, Holsteins; fourth, Devons; fifth, Guernseys.

This Maryland cattle breeder may know exactly what he is saying, but for myself I find that the Jersey comes as near being a general animal as any of the breeds mentioned. He concedes that they are No. 1 butter animals, and if this is so they must of necessity give a good amount of milk. While I admit that to take a Jersey directly from the dairy to the slaughterhouse that, for beef qualities, her flesh may not be equal to that of the breeds he has mentioned. But if the animal is taken from the dairy and fed a month or so on different food and then slaughtered her flesh will be as good as any of the breeds he names as being good beef cattle. Taking all these things into consideration, I find that the Jerseys are as near a general purpose animal as any, and for my part I am content to think so.—ISAAC JONES, Norfolk County, Va.

Hereford Prizes.

The American Hereford Cattle Breeders' Association offers the following special prizes to be awarded to Hereford cattle at the World's Columbian Exposition at Chicago, Ill., in 1893, subject to the following conditions, to wit: (1) Breeding cattle to be recorded in the American Hereford Record. (2) Fat cattle to have sire and dam recorded in the American Hereford Record.

BREEDING CATTLE.

	1st.	2d.	3d.	4th.
Best bull, 3 years and over	$80	$50	$35	$25
Best bull, 2 years and under 3	80	50	35	25
Best bull, 1 year and under 2	80	50	35	20
Best bull calf, under 1 year	80	50	35	20
Best cow, 4 years and over	80	50	35	25
Best cow, 3 years and under 4	80	50	35	25
Best heifer, 2 years and under 3	80	50	35	25
Best heifer, 1 year and under 2	80	50	35	20
Best heifer calf, under one year	80	50	35	20
Sweepstakes, male	125			
Sweepstakes, female	125			
Best herd, consisting of 1 bull 2 years old or over, 1 cow 4 years old or over, 1 cow 3 years old and under 4, 1 heifer 2 years old and under 3, 1 heifer 1 year old and under 2, and heifer calf under 1 year old	300	200	100	50
Best young herd, consisting of 1 bull and 4 heifers, all under 2 years of age, bred by exhibitor	300	200	100	50
Best 4 animals of either sex, under 4 years of age, the get of one sire	200	150	100	50
Best cow and two of her produce	120	80	40	20

FAT CATTLE.

	1st.	2d.	3d.
Best steer or spayed heifer, 2 and under 3 years	$125	$100	$40
Best steer or spayed heifer, 1 and under 2 years	125	100	40
Best steer or spayed heifer, under 1 year	125	100	40
Sweepstakes limited to 1st premium animal in this class.	200		

There is a likelihood of the classification for fat cattle being changed, and an announcement concerning this will be made in due time.—C. R. THOMAS, Independence, Mo.

Pen Notes.

The profit in hog raising comes largely by management.

Hogs need and ought to have in all weathers a variety of food.

The kind of food given hogs plays a large and important part as to whether the profits shall be large or small.

Juicy grass, in addition to preventing many diseases to which swine are heir to, improves the quality of its flesh greatly.

After careful experiments it has been found that a hog should never be fed beyond eight or nine months of age, as there is no profit in it.

The Berkshires, which are now so popular among swine raisers, were first introduced in this country from Great Britain about the year 1811.

Do not wait until the last moment to begin to fatten your hogs. If you contemplate sending them to market in a few months' time, you had better begin the process of fattening all those which will be sent.

The greatest profit, as a rule, is made off those hogs the weight of which is under 200 pounds. While a hog is young he, with the same amount of food, is capable of taking on more flesh than when he reaches an older age.

It will be a treat to the pigs if they are allowed the full privilege of running through the orchard. Besides, they will do a vast amount of good by eating fruit which in decaying forms an admirable breeding place for disease and spores of insects.

The United States is to-day the greatest hog-producing country in the world, and the region of the country of which Chicago is the market center is the greatest pork center of the country or of the world, it having in every respect the greatest facilities for producing and marketing hogs that have ever existed.

It may be well to know that in the early days of hog raising in Ohio and Indiana a case of hog cholera was never heard of. The hogs in those days were all grazed on clover during the grazing season, and in the Fall they were quite often treated to a feed of pumpkins, apples, etc. Those that were to be slaughtered were fed heavily on corn from about the middle of September until Christmas.

Feeding Pigs.

EDITOR AMERICAN FARMER: I have been reading about the proper feed to give to pigs, and despite all that has been said I still adhere to my old method. I think that it is as good as any way of feeding, and as I have been successful in raising pigs I do not think that I will change my method. I do not want to convey the idea that I am an extensive hog raiser. I do not keep over 15 hogs at a time, not counting the farrows I frequently have. When they, the pigs, have reached a good size I kill and market them. I can say right here that I get a good enough profit from them.

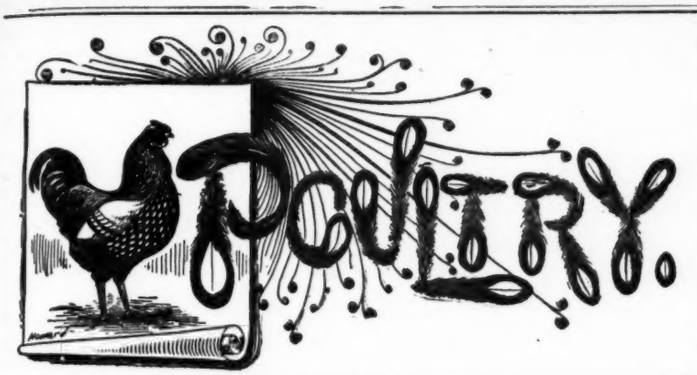
Near my kitchen door I have a large barrel, and it corresponds to a city swill pail. In this tub is thrown all peelings and other refuse of the kitchen. All dishwater and other liquids are thrown in. As there are more liquid than solid substances thrown in the barrel the contents would appear to be greasy water. But I want more water than solid matter in it, and to keep up the supply of liquid matter I frequently throw in several pailfuls of water.

When it is time to feed the hogs I take a bag or two of bran, throw it in the barrel and I get a sort of a mushy mix, which I feed to the pigs. The animals seem to like it and make short work of what is given them.—G. T. N., Germantown, Md.

Purslane Lovers.

The purslane weed is of some use, if it is a nuisance of the farm. The hogs are especially fond of it, and as it is good for them there is no reason why the weed should not be given to them. All farmers are more or less acquainted with the weed and know full well how it thrives. When they are killing the weeds, and if it can be done without danger to crops, let the hogs have the run of the field. Then watch and see what a perfect picnic the porkers will have.

If it is not possible to give the pigs the run of the fields gather all the weeds possible and throw it to them. We know of a farmer who makes it a practice to go every morning and pull a good amount of the weeds for the pigs. He claims that in the morning is the best time to give them this food, and says they enjoy it more. But we think the time of day to give the pigs the weeds is immaterial, and the best time is when you think you have enough weeds collected for them.



Cacklings.

In some cases when a hen stops laying the cause can be attributed to improper feeding.

Remember, it will not pay to keep old hens on hand. Begin to fatten them for market.

Have you ever tried the experiment of throwing some bones with a little meat on them to the poultry?

A prominent Southerner says: "There is more money in an acre of hens than there is in an acre of cotton."

It will not be amiss at this proper time to reiterate the statement of making a fruit orchard out of your poultry yard.

If any of our readers have incubators it is time that they were getting them out and regulating them for actual work.

If you are going to make any repairs on your poultry house do not put the work off until cold weather, but do it as soon as possible.

If you have a spare plat of land and a little spare time on your hands plant some things which can be used as Winter food for the poultry.

Those who are troubled with hens which have an ardent desire to set can cure them without any difficulty in a few days. Just before the hens are in the roost cover the nests in such a way that it will be impossible for the hen to get in, and she will be then forced to roost with the rest of the hens. A few such nights on the roost will generally effect a cure. It is barbarous to put the fowl in a tub of water and keep her there for a number of hours. The desire of the hen to set is natural, and the easiest way to take this desire out of her head is the best way.

We have read of an account of a man who had a good stock of Leghorn chickens which gave excellent satisfaction as layers. He desired layers, and he was positive that he had the best flock of laying hens that he could possibly obtain. One day he had an order for 20 pounds of chickens, and when it took 10 of his Leghorns to fill the order he became disgusted and sold all his flock. He took in Cochins, and although he had fowls which reached a good weight, he did not get enough eggs to supply his demand. He pretty soon sold the Cochins and bought Leghorns again. He is firmly convinced that one breed may be good layers, but not heavy enough for market, and *vice-versa*.

Keep the Henhouse Clean.

EDITOR AMERICAN FARMER: I do not think that you can urge poultry raisers enough to make them comprehend the importance of keeping the henhouse clean. When I began to raise chickens I started to clean my house out every day, and I can proudly say that I have kept up this practice ever since. I must admit that I was once on the point of making it weekly instead of daily, but I was prevented from doing this after I had visited the poultry quarters of one or two of my farmer friends. After I saw their henhouses, the smell and condition in which they were in, I determined that I should clean my house daily. In two cases I did not dare to enter the houses. The smell was so great that I was forced to leave the door after a few minute's stay. The floor of one was covered all around with droppings of from one to three and more inches deep. The roosts were arranged in every conceivable direction, and the nests were as dirty as the floor.

I do not wonder that hens lay their eggs outside of the henhouses when such is the state of affairs. It is to be regarded as good luck, at least, in my estimation, if the owner secured six eggs from the 20 hens every day. When I reproached him about the condition of his house he simply remarked that he didn't have the time to clean the house, and that the hens didn't mind whether the house was clean or not. There was very poor logic in this reply. I feel confident that the hens rebel against such treatment, and we would soon know if we could but understand their language. But, never mind about the fowls not caring as to the cleanliness of the house. There is another and more important point to be considered, and that is from a sanitary view.

A dirty and filthy henhouse is a veritable hothouse for the breeding of disease germs and lice; and sure, when no steps are taken to clean the quarters, why should it not be favorable for the welfare of those things which make poultry raising unprofitable. If poultry raisers would only take the trouble to keep their quarters clean we would hear less of the cry that there is no profit in poultry. I claim that the cleaner the house is kept the better will be the health of the fowls. And if any of the readers of this are familiar with geometry we can draw the conclusion, figuratively, that the health and laying qualities of a flock of poultry are regulated entirely by the condition of their quarters.

I clean my house regularly every day, early in the morning, and, of course, I do not fail to use whitewash and kerosene liberally once every week. The advantages of keeping a house in this condition I briefly sum up as follows:

1. There is no chance whatever for lice to breed.

2. Disease germs have no favorable place for germination.

3. The supply of eggs is greater than if the house was dirty.

These are but a few of the advantages and the most important. If poultry is kept for eggs only, then it is necessary to have the house clean in order to get as many eggs as possible. If poultry is raised for market, then it is necessary to keep them in good health so that they will lay on as much flesh as possible, and a clean house is conducive to health. If poultry is raised for pleasure the owner desires to have his flock look as nice as possible, and this is impossible where the quarters are kept in a dirty condition, since the fowls are liable to disease and will be covered with lice.

Take my advice and keep the henhouses clean. No trouble whatever is experienced. I have dropping boards under all my perches, and it is not a matter of three minutes for me to clean the house. I have a bucket and simply brush the droppings in it. With the boards under the perches I find that it is a good deal easier to clean the house, and considering the short time occupied in cleaning the house as against the benefits reaped I think the expenditure of time well worth the advantages gained.—MRS. MARY HAYWARD.

Poultry at Maryland Fairs.

EDITOR AMERICAN FARMER: I beg space for a few words with the directors of some of the Fall exhibitions held in this State. The poultry breeders of Maryland have been trying for some time to get more suitable buildings to show their stock in at our agricultural fairs, and to have experts engaged to award the premiums. We have met with very meager success so far, with the exception of the generous provision made for our display of fine-bred fowls by the Hagerstown society. At that place an immense hall was built some years ago to receive our contributions of stock, and the expert American Poultry Association judge, G. O. Brown, has been employed at each exhibition to make the awards.

Mr. John L. Cost, the well-known breeder of light Brahmas, is the Superintendent of the poultry department. Affable, conscientious, giving prompt attention to all matters relating to his charge, and exercising the greatest care for the welfare of the fowls entrusted to him, any breeder who has ever exhibited at that place will agree with the writer that a more satisfactory person could not have been selected for the position.

Through the efforts of Mr. Cost, supported by the directors, the display of fine fowls at the Hagerstown Fair has become not only one of the chief attractions at that place, but one of the largest exhibitions of thoroughbred poultry held in this country. Last year there were between 3,000 and 4,000 specimens of the highest quality entered there, and the building used for the purpose was crowded with visitors during the whole time the grounds were open. This season another even larger building has been added, and J. H. Drevenstedt engaged to assist Mr. Brown in the judging.

There can be no doubt that if the managers of other fairs held in Maryland should offer the same inducements the poultry breeders would support them liberally. The benefits are reciprocal in such a case; an attractive feature is added while the breeders are enabled to display his stock before thousands of possible buyers who would not attend an exhibition of poultry alone. But a breeder whose fowls are worth seeing is not likely to risk exposing his stock in the filthy sheds or coops, pregnant with disease and affording no protection from sudden changes of weather, usually provided. Neither does he care to have the excellence of his display set for the public by an ignorant novice acting as judge. At fairs where suitable provision is not made for the poultry it would be better for all concerned to omit that department from the program, for the few scrubs shown under such conditions create a wrong impression of scientific poultry culture with the public, and disgust many with thoroughbred fowls. —BREEDER.

The Molting Period.

The molting period is here. The hens in most cases have ceased to lay, and the egg basket is almost empty. It is to the poultryman's interest to have the hens molt as quickly as possible. The time of molting generally covers a certain length of time, but by judicious management and feeding the owner of the flock can reduce the period quite considerably. It depends upon him whether the hens will get through molting in a short time or not. If left to take care of themselves it will take the fowls quite a time to shed their feathers.

If properly fed they will pass the molting period in a comparatively short time. How is this done? Simply by the kind of feed which is given them. The fowls must have a supply of elements on hand to fill the loss caused by shedding. Feathers cannot be grown unless there is enough of the elements necessary to form the feathers in the hen's body. The fowl never begins to shed until she has stored a certain amount of nitrogen, but very often the supply is exhausted before the bird is half way through molting, and then the owner can help her the rest of the way.

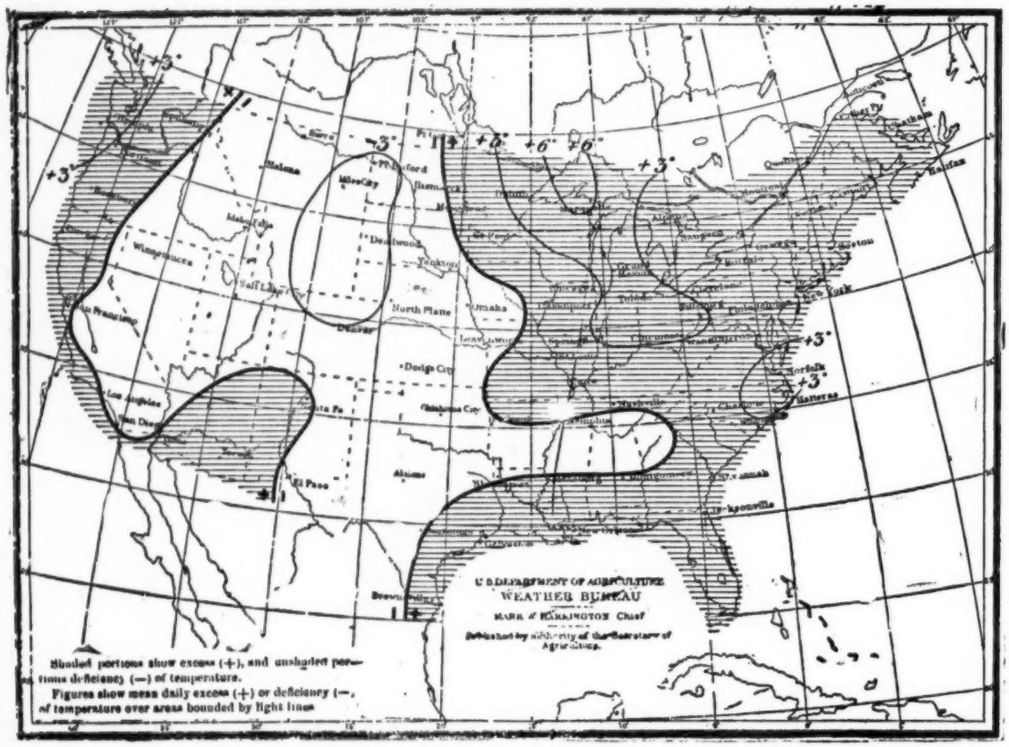
After careful analysis it has been found that feathers are largely composed of nitrogen, and that the larger the supply of nitrogen the shorter the molting period. Milk, beans, meat, clover, bone, and grasses are called nitrogenous foods; and, in fact, all growing vegetables have a good amount of nitrogen.

Now that the foods rich in nitrogen have been named it is plain sailing the rest of the way. Give the fowls plenty of this kind of food and it will be a great help to them. Do not feed them entirely on this, since obviously the results would not be entirely satisfactory, but give them a grain ration at least once a day. Our chickens were fed abundantly on this class of food, and the result is that our fowls were through molting before some others had begun.

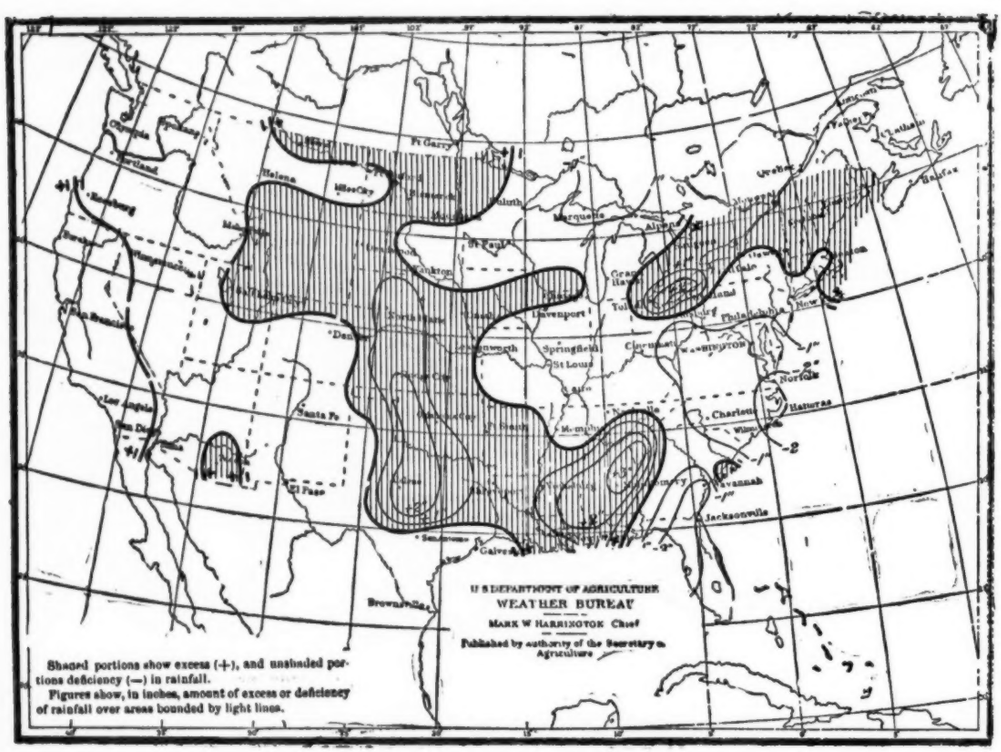
U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Weather-Crop Bulletin for the Two Weeks Ending Aug. 29, 1892.

Temperature Departures for the Two Weeks Ending Aug. 29, 1892.


U.S. DEPARTMENT OF AGRICULTURE
WEATHER BUREAU
MARK W. HARRINGTON Chief
Published by authority of the Secretary of Agriculture.
Shaded portions show excess (+), and unshaded portions deficiency (—) of temperature.
Figures show mean daily excess (+) or deficiency (—) of temperature over areas bounded by light lines

Departures from Normal Precipitation for the Two Weeks Ending Aug. 29, 1892.


U.S. DEPARTMENT OF AGRICULTURE
WEATHER BUREAU
MARK W. HARRINGTON Chief
Published by authority of the Secretary of Agriculture
Shaded portions show excess (+), and unshaded portions deficiency (—) in rainfall.
Figures show, in inches, amount of excess or deficiency of rainfall over areas bounded by light lines.

U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU,
WASHINGTON, D. C., Aug. 30, 1892.

TEMPERATURE.

The two weeks ending Aug. 29 were cooler than usual over the eastern Rocky Mountain slope and the central and northern plateau districts; it was slightly warmer than the average on the north Pacific Coast and over the northern and central districts east of the Mississippi; and generally normal temperatures prevailed in the Gulf Station. The greatest excess of temperature occurred in the Lake Superior region and thence southward to the central Ohio and Mississippi valleys, where the average daily excess ranged from 3° to 6°.

RAINFALL.

From Aug. 15 to 29 there was more than the usual amount of rain in the central Gulf States and from Arkansas and northern Texas northward to British America. Very heavy rains fell during the last seven days of the period named in New England and over portions of the cotton region, and the rainfall in general was sufficient to relieve the drouth conditions, which were beginning to be seriously felt in the central valleys and Atlantic Coast States. In Maryland and the Virginias, however, but little rain has fallen during the past three weeks, except in some localities, and crops are suffering from the effects of drouth.

The Value of Ensilage.

Mr. Henry Talcott, who has been advocating the use of the silo among dairymen in articles in THE AMERICAN FARMER, has plenty of evidence to corroborate his statements.

From an experiment in feeding corn silage in comparison with dry corn fodder, conducted at the Wisconsin Experimental Station, the following conclusions are reached:

1. A daily ration of four pounds of hay and seven pounds of grain feed, with corn silage or field-cured fodder corn *ad libitum*, fed to 20 cows during 16 weeks produced a total quantity of 19,813 pounds of milk during the silage period, and 19,801 pounds of milk during the fodder-corn period.

2. When we consider the areas of land from which the silage and fodder corn are obtained, we find that the silage would have produced 243 pounds more milk per acre than the dry fodder, or the equivalent of 12 pounds of butter. This is a gain of a little more than 3 per cent. in favor of the silage.

A Demonstration.

Mrs. Fretter—What do you think, my dear? Those two lovely canaries of mine are dead.

Mr. Fretter—You don't tell me? How do you account for it?

Mrs. Fretter—There's only one way to account for it. When your friend Profundo was here last night and sang that bass solo his jarring low C joggled the little darlings off their perch and I don't think they ever recovered from their fright.

Mr. Fretter—Too bad! Then it's a real case of killing two birds with one's tone.

THE MARKETS.

WOOL.

BOSTON, Aug. 29.

As a whole the wool market is rather quiet, but the amount of domestic sold seems to be about the same or very little less. The market, however, is without feature of particular interest. The demand seems to be fairly even, though some dealers have reported more sales and others much less. The prospects of the market are usually consider d by dealers to be very good. It is undoubtedly true that Boston holds more wool now than it has for a long time, but this is due principally to the fact that the wools have been hurried forward from the country faster than is usually the case. It is not that there is more wool available, but that there is more in Boston. Wool is no stiffer this week, and some there are who admit a slight easing off in some respects, but the market cannot be quotably changed, and meanwhile we have to note a good demand for nearly all lines of wool.

Ohio and Pennsylvania fleeces are in good request and show little change. For XX wool 28 a28½c is the average of the sales, and these wools cost, clean, about 62c. There is a good demand for X, costing about 59c, clean; also for No. 1 wools at 53c.

Michigan wools have been rather quiet, though there is still an active inquiry for them that is going to result in sales. The inquiry for Michigan X is even more pronounced than for some time, and sales have been made but not reported. The quotation is not over 25½c except in exceptional cases, and these very few, the range running down to 25c, which will make the wool cost about 58c clean.

Combing wools are in good request, notably unwashed. Quarter-blood is quoted at 25a25½c, and three-eighths at 26a27c. Washed Ohio combing has sold at 35c, and delaines are quoted at 32c for Ohio, and 29a31c for Michigan

Texas wools are rather quiter but quite firmly held. We note further sales of choice fancy 12 months' wool at 21½c, to cost about 60c clean. The bulk of the business continues to be of six to eight months' wool, costing from 53a57c clean. We quote the market as follows: 49a52c clean for fine, and 45a48c for medium for Fall wools. In Spring wools fine northern, 12 months' growth, 57a60c; and for eight months' growth, 53a55c. Medium of year's growth is worth all the way from 50a54c, and 48a51c for six to eight months' growth.

Oregon wools are rather quiter, but no changes are noted in values. We quote prices, clean, as follows: No. 1, 53a55c; No. 2, 50a53c; Valley No. 1, 48a51c; and No. 2, 43a45c.

California wools have also been quiet, and are unchanged. We quote the market, clean, as follows: 58a59c for northern free, 12 months; and 54a55c for eight months; 56a58c for southern 12 months; and 50a53 for six and eight months. Fall wools are quoted at 45a50c for free, and 35a 40c for defective.

Pulled wools are much quieter, the demand being more noticeably for B supers than other grades, though such Ohio extras as arrive continue to find customers, bringing about 60c clean. We quote fine A on a scoured basis of 58a62c; A, 50a53c; B, 42a45c; C, 30a33c; combing, 40a43c; fine combing, 50a53c, extra, 53a61c.

Territory wools have again been freely moved, but in some instances at easier rates for large lots. It is very seldom that a wool is sold to cost 60c clean, and it must be very choice Montana, and needed, to bring that price. The greater portion of the sales are of fine medium and fine at about 55c, with medium selling at about 50c and lower. We quote Montana fine, 58a60c; fine medium, 55a57c; medium, 52c; Wyoming and Utah fine, 55a58c; fine medium, 54a56c; medium, 49a52c.

Unwashed fleeces continue to have a very active demand, and sales of both fine and medium are noted. The unmerchantable also seems to be a favorite and is picked up quite as fast as it is brought out. Michigan fine is quoted at 18 a19c, and Ohio is at 19a20c, with medium at 23a 23c. Unmerchantable is quoted at 20a22c.

Australian wools have been less freely moved, but are held with considerable firmness.

We quote the selling prices of the market for leading descriptions, as follows:

	Cents.
Ohio and Pennsylvania No. 1 fleece	32 a34
Ohio and Pennsylvania X	26 a27
Ohio and Pennsylvania XX	28 a29
Ohio and Pennsylvania XX and above	29 a30
Michigan X	25 a26
Michigan No. 1	32 a33
Combing, No. 1	35 a36
Combing, No. 2	33 a34
Kentucky and Ind. ¼-blood combing	26 a27
Kentucky and Ind. ½-blood combing	27 a28
Missouri ¼-blood combing	25 a26
Missouri ½-blood combing	26 a27
Delaine, Ohio fine	32 a..
Delaine, Michigan fine	29 a30
Montana fine	14 a17
Montana medium	19 a24
Wyoming fine	14 a17
Wyoming medium	18 a23
Kansas and Nebraska fine	13 a16
Kansas and Nebraska medium	16 a19
Georgia	25 a26
Texas Spring medium, 12 months	20 a23
Texas Spring fine, 12 months	18 a21
Texas Spring fine, six to eight months	17 a20
Texas Spring medium, six to eight months	21 a22
Texas Fall	14 a20
Kentucky ¼-blood clothing	24 a25
Kentucky ½-blood clothing	26 a27
Unwashed fine Ohio and Michigan	17 a20
Unmerchantable Ohio	20 a21
Unmerchantable Michigan	19 a20
Lambs super pulled	34 a40
Super pulled	30 a44
Extra pulled	26 a34
Canada pulled	28 a32
Western super	25 a30
California Spring	14 a24
California Fall	10 a16
Oregon east	15 a19
Oregon fancy	20 a22
Oregon fine valley	17 a21
Oregon medium valley	24 a25
Montevideo	27 a30
Australian and New Zealand	32 a41
Foreign carpet	12 a26

COTTON.

NEW YORK, Aug. 29.

Futures were very quiet and closed steady at 3a6 points gain for the day, with the Livepool market 1a2 points up, and port receipts moderate. August deliveries stood here at the close at $7.04a7.06 (selling at $7.04a7.05 for 700 bales), September at at $7.02a7.04 (range $7a7.03, on sales of 4,600 bales); October at $7.15a7.17 (range $7.13a 7.17 on sales of 14,500 bales); November at $7.27a 7.28 (range $7.26a7.29 on sales of 8,200 bales); December at $7.39a7.40 (range $7.37a7.40 on sales of 5,600 bales); January at $7.49a7.50 (range $7.47a 7.51 on sales of 7,700 bales); February at $7.62a 7.64 (range $7.60a7.61 on sales of 1,700 bales); March at $7.69a7.70 (selling at $7.68a7.70 for 1,300 bales); April at $7.78a7.80 (selling at $7.96 for 100 bales), and May at $7.88a7.90.

HAY AND STRAW.

There is fair demand, especially for new hay, while the receipts of new hay are larger. Straw is quiet and steady. Quotations: Hay—Timothy, No. 1, 85a95c; No. 2, 70a80c; shipping, 65a75c; inferior, 50a55c; clover, mixed, 60a70c; new hay, 65a85c. Straw—No. 1 rye, 50a60c; No. 2 rye, 40a 50c; oat straw, 35a45c.

HOPS.

Selling quietly at previous quotations. State, 1891, choice, 25c; medium, 23a24c; common to good, 19a22c; 1890, choice, 18c; medium, 13a17c; old, 7a10c; Pacific Coast, 1891, choice, 24c; common to prime, 19a23c; do, 1890, 12a17c.

GRAIN AND BREADSTUFFS.

NEW YORK, Aug. 29.

Flour and Meal—There was less doing even than usual in these markets, as exporters had no orders except for Winter straights of which 2,000 sacks were taken at about $3.75a3.85 in sacks, while the home trade took 1,500 barrels at $4a4.10 in barrels, and clear Winter at $3.75a 3.90. But the home trade still holds off at $4.50a 4.70 for patent Springs, with only sales of 1,800 barrels at the range, and 1,000 bakers' springs in barrels at $3.25a3.40; 500 barrels No. 2 Winters $2.55, and unsound Winters at $3.50.

Southern Flour—Was easy at $3.90a4 for straights, $3.75a3.85 for clear, $4.15a4.35 for patent.

Rye Flour—Is dull and only jobbing at $3.50a 3.85 for superfine Western and State.

Cornme l—Is dull and easier, with corn at $1.12a1.15 for corn in bags, $1.30a1.40 for fine, and $2.85a3.25 in barrels for kiln dried.

Feed—Is dull but steady at 65a67½c for 40, 60, and 80 pound, 75c for 100 pound and sharps.

Wheat—Was dull, but after opening ½c easier, advanced ½c over the close of Saturday on stronger cables, public and private and on stormy weather in Europe and a better demand for cargoes in London. Futures were strong.

	Opening.	Lowest.	Highest.
September	80½	80½	80½
October	81½	81½	82
November	83½	83½	83½
December	84½	84½	85
May	89½	89½	90½

Corn—Spot dull and lower. No. 2 sold at 60c in elevator and afloat; ungraded at 58½a59c, chiefly store. Futures were easier on the early months and strong on the late do.

Future trading in No. 2 corn:

	Opening.	Lowest.	Highest.
August	...	60	60
September	57½	57 7-16	57½
October	57½	57½	57½
May	...	58½	58½

Oats—Spot dull, but steady. No. 2 mixed sold at 38½a39½c later special elevator, and 39½c afloat; ungraded at 42.47c for white, and 39a40½c for mixed. Futures quiet, but firm.

Future trading in No. 2 oats:

	Opening.	Low.	High.
August	...	39	39
September	...	38½	38½
October	39½	39½	39½
November	...	39½	39½
December	...	40½	40½
May	...	42½	42½

Rye—Dull and unsettled; 64a68c for prime Western on track and afloat; State at 65a70c.

LIVE STOCK.

BUFFALO, Aug. 29.

Market closed about steady, with a good many unsold; 1,200 to 1,300-pound steers, $3.90a4.10; mixed butchers' cows, heifers, and steers, $2.50a 3; old cows, $2.25a2.50.

Hogs.—Market closed very dull and weak, with a good many common and light hogs unsold; heavy grades, corn fed, $5.30a5.45; packers and medium weights, $5.25a5.35; Yorker-, good to best corn fed, $5.10a5.20; Yorkers, light to fair, do, 4.90a5.50; grassers, common to good, $4.50a5; good heavy ends, $4.25a4.50; pigs, good to best cor fed, $4.50a4.85; pigs, common skips to fair, 4a4.50; assorted roughs, $4.25a4 50; common roughs, $3.75a4; stags, $3.25a3.75.

Sheep and lambs.—Market closed weak, with liberal offerings late in the day; choice to fancy wethers, $4.75a5.10; fair to good sheep, $4.50a 4.65; culls and common sheep, $2.25a4.40; Canada sheep, $4a4.50; native lambs, good to best, $5.75a6.25; culls to fair, $3.50a5.50; Canada lambs, quotable at $6.25a6.50.

CATTLE.

CHICAGO, Aug. 29.

Quotations are as follows:

Choice to extra steers, 1,500a1,750 pounds	$4 95a5 60
Good to choice steers, 1,300a1,500 pounds	4 25a5 10
Fair to good steers, 1,050a1,300 pounds	3 80a4 55
Poor to medium steers, 900a1,100 pounds	3 00a3 80
Fair to good steers, 1,050a1,300 pounds	3 80a4 55
Good to fancy cows and heifers	$2 30a3 10
Inferior to good cows and heifers	1 25a2 25
Stock steers, 600a850 pounds	1 60a3 30
Feeding steers, 900a1,300 pounds	3 05a3 50
Veal calves, 100a400 pounds	2 50a5 40
Texas steers, 751a1,150 pounds	2 25a3 60

Hogs—Altogether too many hogs were on sale. "Scratch" sales were made early as high as $5.40a5.50, but the best closed at $5.25a5.35. Rough lots sold at $4.60a4.85. Sales were largely at $4.90a5.15 for desirable grades of all weights.

Sheep—Steady and unchanged. Lambs sold at $3.50a6.75, largely at $5.75a6.25. Native sheep sold at $4.25a5.50; Western at $3.85a4.90, and Mexican stock at $3.40a3.75.

BUTTER AND CHEESE.

NEW YORK, Aug. 29.

Butter.—Quiet and unchanged. Creamery, State and Pennsylvania, firsts to extra, 21½a24c; creamery, Western, separator, extras, 24½c; firsts, 22a22½c; seconds, 19a20c; thirds, 17a18c; State dairy, half tubs and pails, extras, 22c; do firsts, 20a21c; seconds, 18a19c; State dairy, Welsh tubs, extras, 21a21½c; firsts, 19a20c; seconds, 17½a18½c; thirds, 16a17c; Western imitation creamery, firsts, 19a20c; seconds, 16a18c; Western dairy, firsts, 18a19c; seconds, 15½a16c; Western factory, June, tubs, extras, 17c; seconds to firsts, 16a16½c; factory, thirds to firsts, 14a16c.

Cheese.—Dull. State factory, full cream, fancy, white, 9½c; do, colored, 9½c; choice, 8½a9c; part skims, common to choice, 3a6½c; State factory, full skims, 1a2c.

Eggs.—Offered freely at quotations. State and Pennsylvania, new laid, choice, 20½21c; Western, 19½a20c; do, fair, 17½a18c; Western inferior, $2a 3.50 per case.

POULTRY AND EGGS.

NEW YORK, Aug. 30.

The market showed no new features other than had been previously noted. Arrivals have been liberal, but strictly fancy stock is not in abundance. Northwestern marks in prime condition would possibly realize 20½c, but many good parcels can be obtained at 20c, and most of the business in the past few days has been transacted on this basis. State eggs were weaker and 21c is an extreme quotation. Ice-house stock has been freely offered at 18½c, but very few sales have been recorded. Quotations were: State and Pennsylvania, 20a21c; northern Ohio, Indiana, Michigan, northern Iowa and Wisconsin, 20c; fresh gathered, prime, 19½a20c; Western, fair quality, 17½a18c; Western, inferior, per case, $2a3.50.

Live Poultry.—Market has ruled steady all week, and for fine stock prices show an improvement. Yesterday's fresh receipts were only a few coops in by express, and these were sold early. Fowls closed strong, and it was impossible to obtain any good lots under 15c. Following prices rule: Spring chickens, local, per pound, 13a14c; do, Western, 13c; do, Southern, 12½a13c; fowls, Jersey, State and Pennsylvania, 13c; Western, do, 13c; old roosters, 7½c; turkeys, mixed, 11a13c; ducks, New York, New Jersey and Pennsylvania, per pair, 60a65c; Western, per pair, 60a75c; geese, Western, $1.25a1.50; Southern and Southwestern, $1.12a1.25; pigeons, per pair, 30a40c.

Dressed Poultry.—Market for the past week has been irregular. Receipts have been heavier than were anticipated, and this gave market a weak feeling. Offerings have been liberal, and, dealers not desiring to hold stock, prices declined. Arrivals have not been arriving on time, and in some cases stock has arrived in bad condition, and this has flooded the market with off-grade goods. Fowls at close moved very slow, and dealers had trouble to dispose of stock even at a reduction. Chickens dull and very quiet. Old roosters weaker and lower. An effort was made to reduce prices on turkeys but it did not succeed, and with light receipts market continues firm. Quotations were as follows: Turkeys, mixed weights, fair to prime, 18c; chickens, Philadelphia, per pound, 17a18c; fair quality, per pound, 14a15c; Western, dry picked, per pound, 13a13½c; scalded, choice, per pound, 12a12½c; fowls, Western, dry picked, per pound, 12a12½c; scalded, prime, per pound, 11a12c; Spring ducks, Long Island, fancy, per pound, 15 a16c; Eastern, do, 15a16c; Western, 8a12c; geese, young, Eastern, 17a18c; squabs, white, large, per dozen, $2.50.

VEGETABLES.

NEW YORK, Aug. 29.

The supply of Long Island potatoes is rather small, and prices are firm. Sweet potatoes are scarce and firm. Prime onions are quit steady. Tomatoes are not plentiful and prices are firm. Squash is steady. Prime corn is in good demand. Eggplant is quiet. Cucumbers are quiet, but cucumber pickles are quite firm. Prime celery is very scarce. We quote:

Potatoes, Long Island, per barrel	$1 50 a1 62
Potatoes, New Jersey, prime, per barrel	1 25 a1 50
Potatoes, New Jersey, inferior, per barrel	75 a1 00
Sweet potatoes, Southern, yellow, per barrel	3 00 a3 25
Sweet potatoes, Southern, yellow, poor to fair, per barrel	2 50 a2 75
Onions, Connecticut, yellow, per barrel	2 00 a2 25
Onions, Connecticut, white, per barrel	2 50 a3 00
Onions, Connecticut, red, per barrel	1 50 a2 00
Onions, New Jersey, yellow, per barrel	1 75 a2 25
Onions, Orange County, red, per barrel	1 25 a1 50
Onions, State, yellow, per barrel	2 00 a2 50
Cabbage, Long Island and New Jersey, flat Dutch, per 100	3 00 a5 00
Tomatoes, New Jersey, Grant, per box	50 a 75
Tomatoes, Acme, per box	60 a1 25
Squash, white, per barrel	75 a1 00
Squash, Long Island, crook-neck, per barrel	75 a1 00
Cucumbers, New Jersey, per box	40 a 60
Cucumbers, pickles, large, per 1,000	1 75 a2 00
Cucumbers, pickles, small, per 1,000	1 50 a1 75
Green corn, New Jersey, per 100	40 a1 00
Green corn, Hackensack, per 100	75 a1 25
Eggplant, New Jersey, per barrel	1 00 a1 50
Celery, Michigan, per dozen roots	20 a 50
Celery, near-by, per dozen bunches	$1 25 a2 00
Cauliflower, per barrel	2 00 a3 00
Lima beans, Hackensack, per bag	1 00 a1 25
Lima beans, New Jersey, per bag	75 a1 00
Green peppers, per barrel	50 a 75

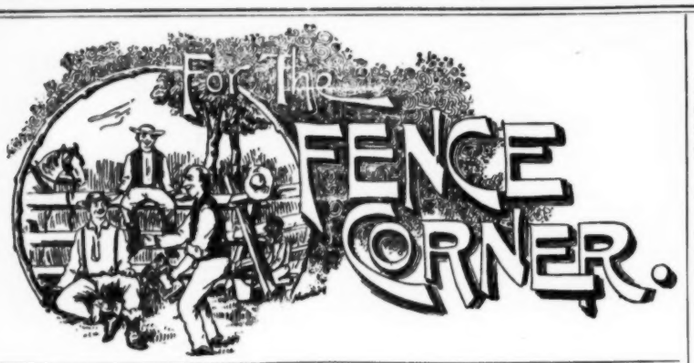
Fresh Fruits—The receipts of apples for the past six days were 1,647 barrels. There is a liberal supply of apples, but only few of choice quality. Huckleberries are plentiful, with only a light demand. There is a large quantity of grapes, but the demand is small. Plums are quiet. Pears are plentiful, and much of the fruit is green. Poor peaches are in great supply, and are not wanted. Muskmelons are very plentiful, with much over-ripe fruit. Watermelons are weak. We quote:

Apples, Hlland Pippin, per double-head barrel	$1 75a 2 25
Apples, Blush, per barrel	1 50a 2 00
Apples, Gravenstein, per double-head barrel	1 75a 2 25
Apples, Orange Pippin, per double-head barrel	1 50a 1 75
Apples, Orange Pippin, per open-head barrel	1 25a 1 50
Apples, windfalls, per barrel	50a 1 00
Apples, Nyack Pippin, per double-head barrel	1 75a 2 00
Apples, Nyack Pippin, per open-head barrel	1 25a 1 75
Huckleberries, New Jersey, per quart	4 6
Huckleberries, New Jersey, per box	25a 75
Huckleberries, Pennsylvania and Mountain, per quart	5a 7
Huckleberries, Shawangunk Mountain, per box	50a 75
Huckleberries, Maryland, per quart	4a 5
Grapes, Virginia, Ives, per 8 pound basket	20a 30
Grapes, Virginia, Ives, per 4 pound basket	15a 20
Grapes, Virginia, Moore's early, per 8 pound basket	35a 50
Grapes, Virginia, Delaware, per 4 pound basket	35a 50
Grapes, Virginia, Niagara, per 4 pound basket	35a 50
Grapes, Virginia, Concord, per 8 pound basket	30a 40
Grapes, Virginia, Concord, per 4 pound basket	20a 25
Grapes, up-river Champion, per pound	3a 5
Grapes, up-river, Moore's early, per pound	5a 8
Grapes, up-river, Delaware, per pound	15a 20
Grapes, Delaware, Moore's early, per pound	4a 6
Plums, up-river, Egg, per keg	1 50a 2 00
Plums, up-river, Egg, per barrel	3 00a 5 00
Plums, per small basket	25a 40
Pears, Bartlett, up-river, per keg	1 50a 1 75
Pears, Bartlett, per round hoop barrel	3 00a 4 00
Pears, Bartlett, per flat hoop barrel	3 00a 3 75
Pears, Flemish Beauty, per barrel	1 50a 2 00
Pears, Flemish Beauty, per keg	75a 1 25
Pears, Beurre Gifford, per barrel	2 00a 3 00
Pears, Scooter, per barrel	1 50a 2 00
Pears, Catharine, per barrel	2 00a 3 00
Pears, Bell, per barrel	1 75a 2 00
Pears, Clapp's Favorite, per keg	1 50a 1 75
Pears, Clapp's Favorite, per barrel	3 00a 3 50
Peaches, New Jersey, prime, per basket	1 25a 1 50
Peaches, New Jersey, ordinary, per basket	75a 1 12
Peaches, New Jersey, poor, per basket	40a 60
Peaches, Delaware and Maryland, Mount Rose, per crate	1 00a 2 00
Peaches, Delaware and Maryland, Elberta, per basket	1 25a 1 75
Peaches, Delaware and Maryland, Stumps, per basket	1 00a 1 50
Peaches, Delaware and Maryland, Mount Rose, per basket	1 00a 1 10
Peaches, Delaware and Maryland, Crawford, per basket	1 25a 1 75
Peaches, Delaware and Maryland, Crawford, per crate	1 50a 2 00
Peaches, Delaware and Maryland, common, per basket	60a 90
Peaches, Georgia, Crawford, per case	1 75a 2 50
Peaches, Georgia, common, per case	75a 1 50
Muskmelons, upper, Jenny Lind, per barrel	1 00a 1 50
Muskmelons, Anne Arundel, per barrel	1 00a 1 25
Muskmelons, New Jersey, Gem, per barrel	75a 1 25
Muskmelons, New Jersey, Nutmeg, per barrel	50a 1 00
Muskmelons, Hackensack, per barrel	1 00a 2 00
Muskmelons, South New Jersey, Jenny Lind, per barrel	75a 1 25
Muskmelons, South New Jersey, Christina, per barrel	50a 1 25
Muskmelons, Maryland, per barrel	50a 1 00
Watermelons, prime, large, per 100	12 00a14 00
Watermelons, medium, per 100	9 00a11 00
Watermelons, small, per 100	6 00a 8 00

HONEY AND BEESWAX.

Beeswax, Western, pure, per pound	26 a 27
Beeswax, Southern, pure, per pound	27 a 28
Beeswax, West Indies, per pound	26 a ..
Honey, white clover, 1-lb boxes, per pound	10 a 12
Honey, white clover, 2-lb boxes, per pound	8 a 10
Honey, white clover, inferior, per pound	6 a 8
Honey, buckwheat, 1-lb boxes, per pound	8 a 10
Honey, buckwheat, 2-lb boxes, per pound	6 a 8
Honey, extracted, State, per pound	.. a 7½
Honey, extracted, California, per pound	7 a 7½
Honey, extracted, Southern, per gallon	60 a 70

Over 100 languages and dialects are spoken by the residents of New York.



Corndodger in a Slide.

Yo' ask me did I git 'im,
Well, kinder looks dat way,
I nevah miss dat filley
'F I got de stuff ter play;
Law! dat ar' ole Cawndodger
Was all dat's in de race.
I knowed it, I done tole ye,
'N' I played 'im straight an' place.

I seed 'im in de paddock
Afo' de race b'gun,
'N' I sized 'im fo' a winner
Case he looked full o' run;
An' when he faced de stahter
I thought 'at he would do,
'N' I goes an' bets my money
Dat 'Dodger come one-two.

An' didn't he come a billin!
'Bout fo'teen lengths ahead—
Dem skates was all a stoppin'
Jes like 's if dey's dead;
Den 'way I goes a lopin'
Up to de bookies' stan',
An' when I cash dem tickets,
Law! wa'nt I feelin' gran'?

Now look heah, lem me tole ye,
Dat filley kaint be beat;
Dey's nothin' kin stay wid 'im
F' long's he's on his feet;
Jes mine out what I'm sayin',
When 'Dodger's in de race,
Go on an' bet yo' money
An' play 'im straight an' place.
—*Chicago Mail.*

Why Didn't He Write?

Mike—It's like owld times to see you again, Pat. Why did you niver wroite me a letter since last we mit?

Pat—Oi didn't know yer address, Moike.

Mike—Thin why, in the name o' sinse, did ye not wroite fur it?

A Sort of a Wild-Cat Scheme.

Mr. Snoozle—It appears that in railroad accidents the first and last cars are always the ones injured.

Mrs. S—Why not leave them off the train?

All Wool and a Yard Wide.

Mrs. Isaacs—How you got your clothes so full of cotton?

Mr. Isaacs (brushing himself)—I vos showing a gustomer dose all-vool goots.

A Sure Sign.

Little Dick—Papa, how does thunder sour milk?

Papa—It is not the thunder, but the electricity.

"How does electricity sour milk?"

"It works certain chemical changes in the constituents of the fluid, which result in the formation of an acid."

"Of course. But how?"

"I don't know."

"I thought you didn't, or you wouldn't 'a' used such big words."

The difference between a looking-glass and a dude is, that one reflects but can't talk.

How Bargains are Put Up.

Clerk—How shall I mark these goods?

Old Tapeyard—Just figure out 50 per cent. profit and add seven odd cents, so the women will think it's a bargain.

A Non-Resident Witness.

"I am innocent, your Honor. Heaven is my witness!"

"I am sorry," returned the sympathetic justice.

"Your witness is beyond the jurisdiction of the court. Five years."

A Great Head.

"Deah! deah! I've left my card-case at home. I cawn't call with you, Cholly."

"Never mind, old chappie, use one of mine."

"But how could I, you know? They've got your name on them."

"So they have, I never thought of that. My, what a head you have got!"

A Bad Echo.

"Ha-ha! That is the funniest joke"—

Johnnie (up tree)—I ever saw.

Always A Woman.

Mike O'Rafferty (pulling his wife out of the well)—Be gorra! a woman's at the bottom av iverything.

Quite Proper.

A sweet-souled, generous divine
Was that New Jersey pulpiteer
Who, seeing at his sermon's close
A slumbering brother there and here,
Did softly ope the book of praise
And as his glance the choir did sweep
Announced in soothing tones the hymn—
"He giveth His beloved sleep."

His Opinion.

Civil Engineer (in search of data)—Is it not the opinion of many people in this locality that the excessive overflow of these bottom lands is due to the lock and dam system?

Native (of Illinois River bottom)—I reckon.

"Based on the fact that dams retard the velocity of the current and increase the deposit of sediment in the river bottom, thus gradually elevating its bed?"

"I guess that's about it."

"You have resided in this vicinity many years, have you not?"

"Ever since I was a boy."

"May I ask if your theory coincides with that I have suggested?"

"Hey?"

"As to the flooding of these bottom lands—I dare say you have an opinion concerning the cause of it?"

"You bet I have."

"In your judgment, then, what is the cause?"

"Rain."

A Cash Doctor.

First Little Boy—Do you go to the country every year?

Second Little Boy—No; sometimes papa don't pay the doctor's bill, an' then the doctor gits mad an' won't order mamma out of th' city.

A New Dodge.

"Dunn has played me a mean trick."

"He has? In what way?"

"I sent him to you a few days ago to collect that little bill you owe me, and the knave hasn't turned up with the money yet. Likely as not he has appropriated it."

"I—er—I—the fact is I didn't pay him, but I will pay you now and you can send me a receipt."

"Oh, ah. I didn't think—thank you. I was mistaken about Dunn after all."

Our Eccentric Language.

Our English language is full of eccentricities. We wind up a watch to set it going, but we wind up a business concern to stop it.

A Very Stupid Paper

Goslin—In the papah heah is an account of a fellah who killed his wife and committed suicide, doncher know.

Sappy—Which did he do fawst, aw?

Goslin—The papah doesn't say. Vewy stupid, Aw'm sure.

A Hard Place.

Ballock—Is it possible! Can that be our old friend Hallock. What makes him look so hard?

Mallock—He's working in a stone quarry.

The Reign of Labor.

Mrs. Maloney—And so yez wants to get a cook?

Mrs. Wayup—Yes, that is what I came here for.

Mrs. Maloney—Well, have yez any riferinces?

Why He Said Grace.

Wagg—I suppose Bulfinch is the most pious fellow I know.

Wooden—Why, he never struck me that way. In fact, I always thought him rather worldly.

Wagg—Well, I happen to know for a fact that he never kisses his girl without saying grace.

Wooden—Why, what in the world does he do that for?

Wagg—That's her name.

Just What He Wanted.

"Say, boss, I wonder if you couldn't trim my hair wid dat grass-cutter?"

"I don't know. I'll try it."

"Thanks, old boy. Shake!"

A Disagreement.

Neighbor—Why, how is this, Uncle Abner! When I saw you last week you were on trial in Macon for bigamy, with the evidence strongly against you. Is it possible that the jury disagreed?

Abner—Oh, no sah! De jury didn' disergree, but w'en dey said I wuz guilty I jus' disergreed merself an' lit out f'om dar whilst de sher'f wuz lickerin' wid de boys. I's like oner dese 'scape men' watches, sah. I knows how to go in good time.

A Sure Remover.

Mrs. Queasy—I do wish I knew some way to remove freckles. My husband has them so bad it mortifies me to be seen on the street with him.

Mrs. Shockem—There is one thing will surely remove them.

Mrs. Queasy—What is that, pray?

Mrs. Shockem—Arsenic, properly administered.

City and Country Markets.

Mr. Citiman—We are getting perfect butter now. Buy it of a farmer who comes into the city twice a week. I presume you have good butter right along.

Mr. Suburb—First-rate.

"Make it yourself?"

"No; buy it in the city and carry it home."

GOLD BAND

DECORATED TABLE SERVICE

AT CUT PRICES.

Read Below the Four Selections to Suit Various Tastes and Needs.

We have secured for the benefit of our subscribers a splendid set of Decorated China with gold band around the edge of the pieces. It is made especially for us at the largest and best pottery in the United States. We buy in very large quantities, and thus we are able to supply this elegant ware as described below. We are able now to make a grand combination of four different sets to choose from.

Our China is highly ornamental, being decorated in three colors, with a design of fruits and flowers, in addition to which there is a gold band about the edge, as shown in the cut, which is made from a photograph of a set of the China we offer.

In order to save space, all the pieces are shown in one picture. The reader can readily tell which are referred to. The same plates, teapot, sugar-bowl, etc., go with all the sets, but in the larger offers more and more pieces are added to the ten set. All are of the same beautiful style of decoration.

First is

A 56-PIECE TEA SET.

It consists of 12 plates, tea size; 12 fruit saucers, teapot and cover, sugar-bowl and cover, a creamer, one bowl, one dozen tea cups and saucers to match, one bread plate, and one cake plate.

DINNER AND TEA SET COMBINED, 84 PIECES.

This beautiful set comprises 12 breakfast plates, 12 tea plates, 12 cups, 12 saucers, 12 fruit saucers, 12 individual butter plates, two cake plates, one teapot and cover, one sugar-bowl and cover, one creamer, one slop bowl, one large meat platter, one large and stylish gravy-boat, and one large vegetable dish and cover, in all **84 Pieces**, making a complete dinner or tea set for any table.

EXTRA DINNER AND TEA SET COMBINED, 100 PIECES.

This set is the same as the 84-piece set, with the addition of the following beautiful and useful articles, viz: 12 pie plates, one pickle-dish, one water-pitcher, and two bakers, or uncovered vegetable dishes, in all 100 pieces.

GRAND EXTRA DINNER AND TEA SET COMBINED, 125 PIECES.

This the same as the 100-piece set described above, with the addition of the great turkey platter and one dozen after-dinner coffee cups and saucers to match.

This makes the grandest China premium ever offered entire by us or any other publisher, and at a price below that possible to anyone else.

HOW TO SECURE IT.

First, the Tea Set. We will send this beautiful 56-piece tea set, by express or freight, for $6.25, or for a club of 10 yearly subscribers and $2 additional; or we will give it free for a club of 20 yearly subscribers at $1 each.

The 84-piece dinner and tea set combined will be sent to any address in the United States as a Premium for a Club of only 10 subscribers for one year and $3 additional, or for a Club of only 20 subscribers for one year and $1.50 in money additional; or we will sell it outright for $8.10. We prefer the Club.

The 100-piece extra dinner and tea set combined will be sent to any address in the United States as a Premium for a Club of 10 yearly subscribers at $1 each and $5.75 added; or for a Club of 20 yearly subscribers and $3 added; or *free* as a Premium for a Club of 33 yearly subscribers. For sale at $10.35.

The grand extra combined dinner and tea set of 125 pieces we will send to any address in the United States as a Premium for a Club of 10 yearly subscribers and $8.75 added; for a Club of 20 subscribers and $4.40 added. Sent as a *free* gift to a Club-raiser who sends in a Club of 45 yearly subscribers. For sale at $13.50.

The China will be carefully boxed and shipped by express or freight, the receiver to pay charges of transportation. Fast freight takes a little more time than express, but it is preferable, unless the goods are needed in special haste; because the charges are very much lower by freight, and, in fact, except to very distant points, amounts to but a trifle.

Address

THE AMERICAN FARMER CO.,
1729 New York Avenue, Washington, D. C.

"THE HONEST FARMER."

A Beautiful and Durable Watch, With a Nickel-Plated Chain Thrown In.

A GRAND PREMIUM FOR CLUB-RAISERS.

This is the name we give to the famous Elgin Watch that is best adapted to the use of farmers in every part of the United States. This watch is complete in every way, and represents the triumph of American skill and genius. The case is made of solid nickel silver, a composition which is handsome and more durable than coin silver. The face is protected by a heavy crystal of beveled plate glass strong enough to bear a great weight. It winds and sets at the stem and need never be opened. The works are beautifully finished, and contain seven handsome jewels, compensating expansion balance, patent safety pinion, improved plain regulator, and other great improvements suggested by years of study and experiment. The parts are interchangeable, and are made of the most highly-tempered metals. Some of the parts are produced with such difficulty that they are worth ten times their weight in gold.

No farmer or farmer's son should be without this watch, which keeps the time so accurately that it needs to be compared with a regulator only once in many months. We have contracted for a large number of these watches, and to make them move quickly we have determined to furnish a chain with each watch. These chains will not be sold separately. They are made of nickel-plated steel and are ornamented with a charm. Thousands of farmers will, of course, wish one of these watches, and our immense supply will probably be exhausted within a few months, so club-raisers and purchasers should allow no time to pass before they try to get one for a club or for cash.

For the present we offer this watch and chain for a club of 10 subscribers and $2.50 added money—$12.50 altogether—or we will send both watch and chain (without the paper) to any address by insured mail for $5.00. With the paper, one year, $6.25.

Address

THE AMERICAN FARMER CO.,
Washington, D. C.

PATENT LINK DOG COLLAR.

We have secured for the benefit of our subscribers the most improved pattern of Dog Collar.

It is a patent safety-link, so constructed that it cannot be pulled open by a dog tugging at the chain. At the same time it is not soddered. We have it made of four different kind of materials, all same style link, as shown in the cut. It comes 13, 14, or 16 inches long, according to the size required.

First. Is a solid Aluminum Collar, made of the new metal, having much the appearance of coin silver, but almost as light as pine wood.

We will send this Collar free for a club of 4 subscribers, or we will send the Collar and the paper one year for.....$1.25
For sale alone.....1.00

Second. The same style of Collar in solid nickle silver will be sent free as a premium for a club of 3 subscribers, or sent with the paper one year for.....$1.25
For sale alone.....1.00

Third. The same style of Collar in nickle-plated steel sent free for a club of 2 subscribers, or sent with the paper one year for.....$1.10
For sale alone.....80

Fourth. The same style of collar in polished steel, for sale with the paper one year for.....$1.05

This chain is not for sale except in connection with the paper.

In ordering be sure and not only specify the material of the collar you want, but also the length, whether 13, 14, or 16 inches.

Address

THE AMERICAN FARMER CO.,
Washington, D. C.

THE FARMERS' SPECIAL REFERENCE BOOK

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